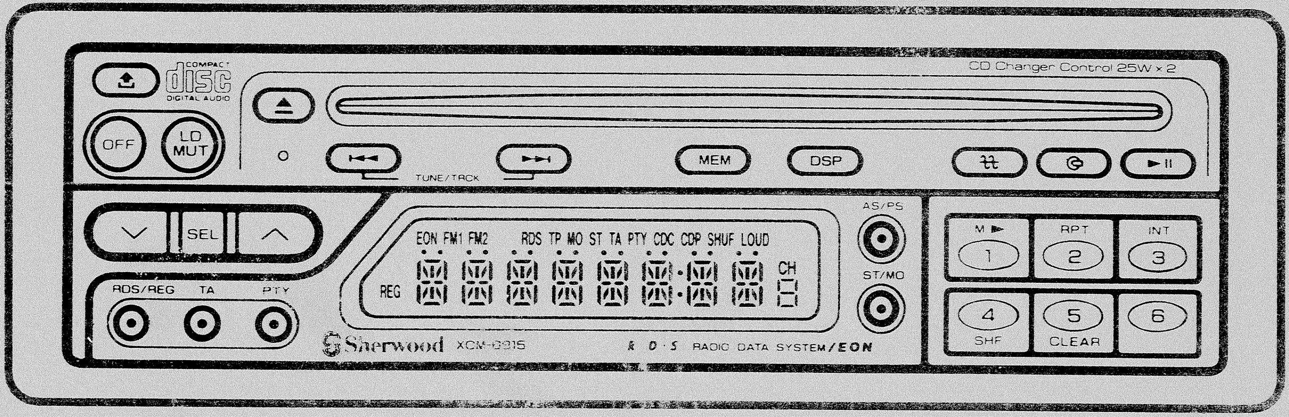
SERVICE MANUAL

XCM-6815

FM/MW/LW RDS COMPACT DISC PLAYER RECEIVER WITH CD CHANGER CONTROL


COMPACT disc DIGITAL AUDIO
CD Changer Control 25W x 2
OFF
LD MUT
TUNE/TRCK
MEM
DSP
SEL
AS/PS
ST/MO
EON FM1 FM2 RDS TP MO ST TA PTY CDC CDP SHUF LOUD
REG
CH
RDS/REG
TA
PTY
Sherwood XCM-6815
R·D·S RADIO DATA SYSTEM/EON
M ▶
RPT
INT
1
2
3
4
5
6
SHF
CLEAR

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Sherwood

Specifications

1. Audio Section

Power Output/CH into 4 OHM	
@1KHz, 10% THD, 2CH/4CH	16/5 Watts
@Max. Power Output,2CH/4CH	22/6 Watts
Tone Control	
Bass @ 100Hz	± 12dB
Treble @ 10KHz	± 12dB

2. Tuner Section

FM Section

Frequency Range	87.5-108.0MHz
Frequency Response ± 3dB	20-15,000Hz
Usable Sensitivity S/N 30dB @ 75 ohm	2μV
50dB Quieting Sensitivity Stereo @ 75 ohm	60μV(46.8dBf)
S/N Ratio	
• Mono	65dB
• Stereo	63dB
Stereo Separation @ 1KHz	35dB
AM Suppression	50dB
Capture Ratio	3.0dB
Image Rejection Ratio @ 106.0MHz	55dB
IF Rejection Ratio @ 90.0MHz	100dB
Seek Stop Sensitivity	20dB

MW Section

Frequency Range	522-1620KHz
Usable Sensitivity @ 20dB S/N	30dB
Selectivity @ ± 10KHz	40dB
S/N Ratio, 30% Mod. 5mV Input	50dB
Seek Stop Sensitivity @ 999kHz	40dB

LW Section

Frequency Range	144-281KHz
Usable Sensitivity @ 20dB S/N	30dB
Selectivity @ ± 10KHz	35dB
S/N Ratio, 30% Mod. 5mV Input	50dB
Seek Stop Sensitivity @ 218kHz	40dB

3. CD Player Section

Frequency Response	20-20,000Hz
THD, @1V	0.2%
S/N Ratio • UNWTD	80dB
• WTD	90dB
Channel Separation @ 1kHz/10kHz UNWTD	60/50dB

4. General

Operating Voltage	DC14.4V(10.8-15.6V) Negative Ground
Speaker Impedance	4 ohms

5. Chassis Dimensions	50(H)x178(W)x170(D)mm
6. Front Panel Dimensions	50(H)x170(W)x18(D)mm
7. Net Weight	2.2Kg
8. Fuse • Main Fuse	5A Normal
• Backup Fuse	1A Normal

Note : Design and specifications subject to change without notice for improvements.

Using the RDS Function

What is RDS?

The RDS(Radio Data System) is a digital information system developed by the EBU(European Broadcasting Union). Piggy-backed on normal FM broadcasts, RDS offers a variety og information services and automatic retuning functions for RDS-compatible car stereos.

RDS digtal data includes various data, such as PI, PS, AF, TP, and TA.

PI	Program identification
PS	Program Service Name
AF	List of Alternative Frequencies
TP	Traffic Programme
TA	Traffic Announcement

RDS function of this unit

This unit has the following functions for making use of RDS data.

- Station name display using PS.
- AF(Alternative Frequency) reception, which automatically tunes into the stronger station in the network being listened to using PI and AF.
- Automatic reception of traffic information broadcasts using TP/TA.

Network/Station Name Display

Switch the radio on choose one of the three FM bands. When you tune into an RDS station with manual or seek tuning, the frequency display changes to the network/station name display after a few seconds by means of the PS code.

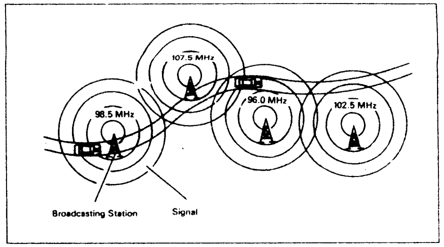
- The RDS functions of this unit use RDS codes transmitted along with FM broadcasts. RDS doesn't work on the MW or LW bands.
- The RDS functions may not work properly in areas where the RDS transmissions are at an experimental stage or where there are flaws in the broadcasting system.
- To see the frequency when the network/station name is being displayed, hold the stereo/monaural button down for at least two seconds. The frequency will then appear and will stay on for as long as the button is held down.

AF (Alternative Frequency) Reception

This unit retunes to the stronger alternative transmitter in the list of alternative frequencies (AF). Thus a motorist can keep listening to the programs in the same network.

Example :

If there are the following network broadcasting stations, the reception frequency automatically changes from 98.5 MHz to 107.5 MHz to 96.0 MHz to 102.5 MHz, but a motorist can keep listening to the programs in the same network while driving from point A to point B.



Alternative Frequency Reception

To select Alternative Frequency reception, press the AF button.

Once tuned to an RDS network station, as long as youb drive within the area or nation served by the network, the unit will automatically retune to the strongest transmitter serving the network, using the PI and AF codes, when the tuned station gets weaker.

- When the AF button is on, only RDS stations can be tuned in with seek or preset scan tuning.
- If BSM is activated while the AF butten is on, only RDS stations will be preset.
- Non-RDS stations such as those using the Swedish MBS system may be tuned is as RDS stations, but this is due to both systems sharing the same 57-kHz subcarrier frequency and is not a malfunction of the unit.
- If the tuned RDS station doesn't have AF (List of Alternative Frequencies) data or the unit cannot receive the AF data for some reason, the AF function will not work when the tuned RDS station's signal falls below a certain level. When this happens, AF flashes on the display, indicating that it isn't working.
- If the signal from the tuned RDS station falls below a certain level and AF works, it may be that the other transmitters on the same network are found to be even weaker.

  If this is the case, Af flashes on the display, indicating that it isn't working.
- If a station frequency is held in a preset memory for FM band, the AF function will also be available to the preset station (Network memory).
- If the AF buton is pressed before selecting a preset station, the alternative frequency reception functions when the preset station is being recalled. Because of this, there may be a pause before the station comes on, but this is not a malfunction.
- At times, some stations in a network broadcast regional programs that are different from those of the other stations in the network. If the radio has picked up a regional program and you want to continue listening to it, hold the AF button down for more than two seconds to switch the regional function on. (REG ON will appear on the display while the button is held down.)

Using the AF function, the redio tunes into thoes stations that are broadcasting the regional program. Hold down the AF button again for more than two seconds to cancel the regional function. (REG OFF will appear on the display while the button is held down.)

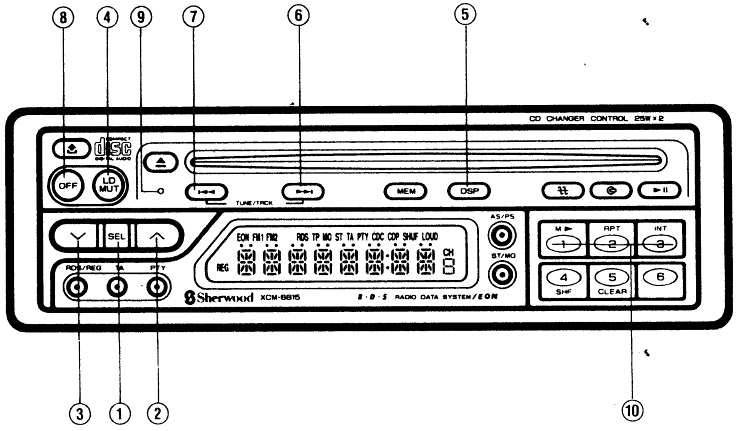
Traffic information reception

Tune to a station (TP appears on the display) to receive traffic bulletins. If you'd like to stand by for the bulletins while listening to a cassette or CD (KEH-6000RDS), tune to a TP or SK station and then press the TA button. When a traffic bulletin is broadcast, the set automatically switches from a cassette or CD to the bulletin. The volume automatically increases for the bulletin and cannot be turned down.

- Even when the redio is off, pressing the TA button while listening to a cassette or CD switches the radio on and readies it to pick up traffic bulletins, unless the redio is set to MW or LW, in which case, the radio does not go on and an alarm beeps.
- While TA is on and you are listening to a cassette or CD (TA is shown on the display), the radio start BSA (Best TP or SK Station Auto search) 10 to 18 seconds after TP disappears from the display, tunes in the strongest TP or SK station, and stands by for a traffic bulletin. BAS doesn't work when AF is on, so turn the AF button off when you want to use BSA.
- While TA is on and you are listening to a cassette or CD, pressing the preset scan button causes the radio to start TIPS (Automatic monitoring of the several TP or SK stations) and stand by for a traffic bulletin from any one of these preset TP or SK stations in the same band as that currently being used.
- When the AF button is off, there minutes or more after TP has disappeared from the display during TIPS, the radio starts BSA.
- Don't press the TA button in an area or a country where the traffic information service is not available, as seek tuning and preset scan will not pick up any stations. An alarm sounds 30 seconds after the TA button has been pressed, warning the driver to switch it off.
- Thirty to 38 seconds after TP disappears from the display, which occurs if the signal from the TP of SK station becomes weak, an alarm sounds for ten seconds to tell you to tune to another TP or SK station.

Location of Controls

1. General Section


⑧
④
⑨
⑦
⑥
⑤
CD CHANGER CONTROL 25W x 2
COMPACT disc DIGITAL AUDIO
OFF
LD MUT
TUNE/TRACK
MEM
DSP
AS/PS
ST/MO
SEL
RDS/REG
TA
PTY
EON FM1 FM2 RDS TP MO ST TA PTY CDC CDP SHUF LOUD
REG
CH
M ▶
RPT
INT
1
2
3
4
SHF
5
CLEAR
6
Sherwood XCM-8815
R·D·S RADIO DATA SYSTEM/EON
③
①
②
⑩

■ **SEL (control mode select) Button**

- Press the SEL button ① to select the desired mode, TRE (treble), BAS (bass), BAL (balance), FAD (fader), or Vol (volume). At each press of the button, the desired mode changes as follows; Vol → BAS → TRE → BAL → FAD → Vol

■ **Volume Up/Tone Up/Balance Right/Fader Front Control Button**

- Press the ∧ side of button ② to increase the volume or the tone (treble, bass), and to enhance the balance right or the fader front.

■ **Volume Down/Tone Down/Balance Left/Fader Rear Control Button**

- Press the ∨ side of button ③ to decrease the volume or the tone (treble, bass), and to enhance the balance left or the fader rear.

NOTE:

- The volume level in display is changed from 0 to 40 according to the volume up/down button ②, ③.
- The tone level (treble, bass) in display is changed from −14 to +14 according to buttons ②, ③.
- The fader level in display is changed from 15 (left) to 15 (right) according to buttons ②, ③.
- The balance level in display is changed according to the volume level.

■ **Loudness Button**

- Press and hold the LD button ④ for more than 2 seconds to reinforce, bass and treble especially when listening at low volume.
- Press and hold this button again for more than 2 seconds to disengage it.

■ **Mute Button**

- Press the MUTE button ④ to mute the sound level (−20dB attenuation).
- Press this button again to disengage it.

■ **Clock Display Button**

When the ignition switch is on, the display shows the frequency. Press this button ⑤ to change the frequency mode to the time mode or RDS broadcasting information, etc.
Setting the Current Time

- While holding the DSP button ⑤, press the tune up (▶▶|) button ⑥ to change the minute digits.
- Still holding the DSP button, press the tune down (|◀◀) button ⑦ to change the hour digits.

■ **Power Off Button**

- Press the power off button ⑧ to stop tuner, CD play, or CD changer operation, and power will be turned off.

■ **Reset Button**

Use this button ⑨ for the following reasons;

- Initial installation of the unit when all wiring is completed.
- When CD disc does not work properly and does not accept the disc.
- CD disc is accepted but numeric indication is erratic or time readout is constantly 00:00. Everytime the reset button is activated, disc and receiver programming will be erased, thus requiring reprogramming of the unit.

Do not press the RESET when the unit has been pulled out from its mount.

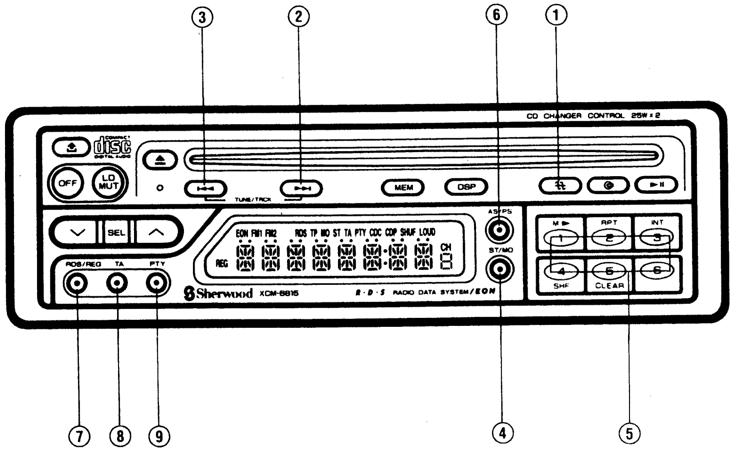
■ **Volume Preset Memory**

This button ⑩ can be used to memorize the volume of your choice. Memorizing is possible only in volume mode.

1. Adjust the volume as desired.
2. Press and hold for more 2 seconds, and the adjusted sound will be memorized in the numbered button.

- Holding down the button for less than 2 seconds recalls the previously memorized volume level.

2. Radio Section


③
②
⑥
①
CD CHANGER CONTROL 25W x 2
OFF
LD MUT
TUNE/TRACK
MEM
DSP
AS/PS
ST/MO
SEL
RDS/REG
TA
PTY
EON FM1 FM2 RDS TP MO ST TA PTY CDC CDP SHUF LOUD
REG
CH
M ►
RPT
INT
SHF
CLEAR
Sherwood XCM-6815
R·D·S RADIO DATA SYSTEM/EON
⑦
⑧
⑨
④
⑤

■ Tuner/Band Button

This button is used to switch from CD player or CD changer to the tuner mode.

- When the TUNER SELECTOR button ① is pressed, the frequency appears on the digital screen and the mode is set to tuner.
- If this button is pressed when the power is off, the power turns on and a station is received.
- When this button is pressed on power on, the band is changed from FM to MW or LW.

■ Manual Tuning Button

- Press the Manual tuning up (▶▶|) button ② to count up the radio frequency step by step.
- Press the Manual tuning down (|◀◀) button ③ to count down the radio frequency step by step.

■ Auto (Seek) Tuning Button

- Press and hold the Tuning up (▶▶|) button ② for more than one second to seek the next higher frequency.
- Press and hold the Tuning down (|◀◀) button ③ for more than one second to seek the next lower frequency.

The tuning process will stop when a strong signal is received.

■ Mono Button

- Press the Mono/Stereo button ④ when receiving an FM broadcast under normal condition. The unit will automatically switch to mono or stereo as you tune in to different stations.
- If in some cases, the stereo station is too noisy or adjacent channel interference is heard, press this button for noise-free mono reception.

■ Preset Station Buttons (Programming Stations)

For presetting stations, the unit has an electronic memory circuit which is capable of memorizing 6LW, 6MW, 12FM stations for a total 24 stations.

1. Select the desired band.
2. Tune the desired station using the TUNE or SEEK button
3. Press and hold (for more than 2 seconds) any of the numbered buttons ⑤. The currently tuned radio station is now memorizing into the button number selected.
4. Tune to another station and memorize it by pressing and holding another number. Follow this procedure until six stations your regularly listen to are memorized.
5. Press the band button to change to another band and follow the same procedure for another 6 stations.

■ Programming with AMS (Automatic Memory System) — 'AS'

- If there is a CD in the player, remove it, and turn on the radio.
- Press the BAND button to select the desired LW, MW or FM band.
- Press and hold the AS button ⑥ for more than 2 seconds and release it. From whatever frequency you are on, the stations are scanned and the next 12 strong stations in your area are automatically programmed into the numbered button. The unit then begins scanning the programmed stations, which will continue until any function button is pressed.

Caution: If you want to change only one station at a time, do not use AS. Be sure to program single station manually.

■ Tuning a Programmed Station

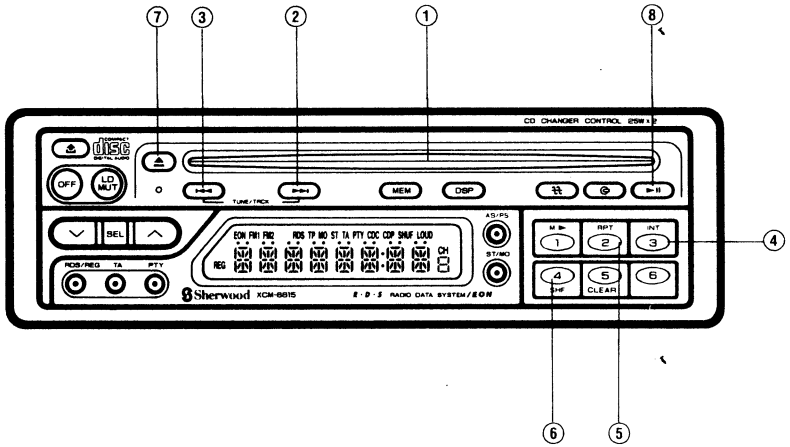
- If there is CD in the player, remove it, and turn on the radio. Press BAND for the desired band.
- Press the number containing the desired frequency. Then the frequency appears on the display.

■ Scanning the Programmed Stations

- Using the preset scan PS button ⑥, you can scan all programmed stations until you find the one you want to listen to. Press band for the desired band.

1. Press PS button ⑥. Scanning moves through all 12 stations in the FM band (12 stations in the LW/MW band) selected. Scanning stops at each station for 5 seconds. During this time, the frequency and 'CH' appears on the display.
2. When the desired station frequency appears, press PS button again to discontinue the scanning process.

3. CD Player Control Section


⑦
③
②
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⑧
CD CHANGER CONTROL 25W x 2
OFF
LD MUT
TUNE/TRACK
MEM
DSP
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ST/MO
SEL
RDS/REG
TA
PTY
EON FM1 FM2 RDS TP MO ST TA PTY CDC CDP SHUF LOUD
REG
M ►
RPT
INT
④
SHF
CLEAR
Sherwood XCM-6815
R·D·S RADIO DATA SYSTEM/EON
⑥
⑤

■ Disc Play

- Insert a compact disc into the disc insert slot ① with the label surface facing up.
- The disc is automatically loaded into the unit and play starts at the beginning of the first track.
- The 'CDP' indicator will appear, track number and play time (minute/second) are displayed in the digital display.

NOTE: You can insert a 3 inch CD without adaptor just like a normal CD.

■ Track Selection Button (To Search for a Particular Track)

If you wish to search for A track, push the Track Up/Down button ②, ③ until the desired track number is indicated on the digital display.

Forward Mode

- Press the Track Up (▶▶|) button ② once. The display counter indicator will then display the next track number. The unit will search the beginning of the next selection, and start to play it.
- To search for the track further ahead, press this button until the desired track number is indicated on the display counter.

Reverse Mode

- Press the Track Down (|◀◀) button ③ once. The beginning of the track being played is searched for.
- To search for the track further back, press this button until the desired track number is indicated on the display counter.

■ Manual Music Search Button (To Search for a Particular Point in a Selection)

- Press and hold the Manual Music Search button ②, ③ to rapidly advance or retrace a short distance to the desired position on a track during disc play.

■ Intro Scanner Play

This function allows playback of the first 10 seconds of each track in succession and is useful in searching for a specific program ahead on a disc.

- Press the Intro Scan button ④ to scan the track. The digital display will indicate 'INT' and the track number display indicates the next track number. The unit advances to the beginning of the next track, and starts to play the track for 10 seconds, then scan on to the next track for 10 seconds, and so on.
- Press this button again to select the desired track, which will cause the unit to stop instantly at the position and start playing the desired music.

■ Repeat Button

- Press this button ⑤ to repeat only one track on the disc. The display screen will indicate 'RPT'.
- Press this button again to cancel the repeat play.

■ Shuffle (Random) Button

This is a playback mode in which the built-in microcomputer selects the track number in random order.

- Press the button ⑥ to play the disc in random order. The display screen will be displayed 'SHUF'. When the current track is over, future tracks will be selected randomly.
- Press this button again to clear the random play, and normal play is selected.

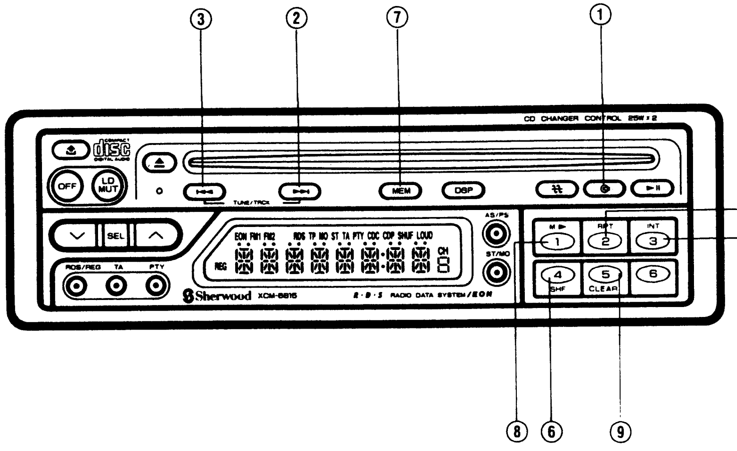
■ CD Eject Button

- Press this button ⑦ to remove the disc, and it will come out automatically.

■ Play/Pause Button

- Press the Play/Pause button ⑧ to play the disc. The disc will playback.
- Press again to stop playback.

4. CD Changer Control Section



■ Ordinary Disc Play

1. Press the CDC button ① to play the CD changer during the CDP or the tuner operation. When the CDC button is pressed, 'CD' is displayed, and playback starts from the first track on the first disc (First time only).

NOTE: If no magazine has been set in the CD changer, the CDC button does not operate.

2. By pushing the CDC button and then pushing the disc selector button (Preset 1-6), you can select a different disc in CD magazine for 5 seconds.

■ Track Selection Button (To Search for a Particular Track)

If you wish to search for A track, push the Track Up/Down button ②, ③ until the desired track number is indicated on the digital display.

Forward Mode

- Press the Track Up (▶▶|) button ② once. The display counter indicator will display the next track number. The unit will search for the beginning of the next track, and start to play it.
- To search for the track further ahead, press this button again until the desired track number is indicated on the display counter.

Reverse Mode

- Press the Track Down (|◀◀) button ③ once. The beginning of the track being played is searched for.
- To search for the track further back, press this button again until the desired track number is indicated on the display counter.

■ Fast-Forward Button (To Search for a Particular Point in a Track)

- Press and hold the Search Up button ② to rapidly advance a short distance to the desired position on a track during disc play.

■ Rewind Button (To Search for a Particular Point in a Track)

- Press and hold the Search Down button ③ to rapidly advance a short distance to the desired position on a track during disc play.

■ Intro Scanner Play

This function allows playback of the first 10 seconds of each track in succession and is useful in searching for a specific program ahead on a disc.

- Press the Intro Scan button ④ to scan the track. The digital display will indicate 'INT' and the track number display indicates the next track number. The unit advances to the beginning of the next selection, and starts to play the selection for 10 seconds, then scan the next selection for 10 seconds, and so on.
- Press this button again to select the desired track which will cause the unit to stop instantly at the position and start playing the desired music.

■ Repeat Button

- Press this button ⑤ to repeat only one track on the disc. The display screen will indicate '1 RPT'.
- Press this button again to repeat one disc of the discs. The display screen will indicate 'RPT'.
- Press this button again to cancel the repeat play.
- This button operates as follows; 1 RPT → RPT → OFF

■ Shuffle (Random) Button

This is a playback mode in which the built-in microcomputer selects the track number in random order.

- Press this button ⑥ to play the disc in random order. The display screen will be displayed 'SHUF'. When the current track is over, future tracks will be selected randomly.
- Press this button again to clear the random play, and normal play is selected.

■ Program Button (To Program)

Up to 32 track can be programmed to play in any order. The track can be programmed during compact disc play.

1. Press this button ⑦ to enter the program mode. The program number in the display screen and the time counter disappears.
2. Press one button among preset buttons to select the disc to be memorized.
3. Press the Track Up/Down button ②, ③ to select a track to be memorized.
4. Press this button again to enter a track number into memory. To continue the memory operation, repeat step 2 and 3 and up to 32 tracks can be memorized.

NOTE: When this program has memorized up to 32 tracks, press the button ⑦ step by step to check the memory. Memorized track numbers will be played back in order, starting from No. 1 to No. 32.

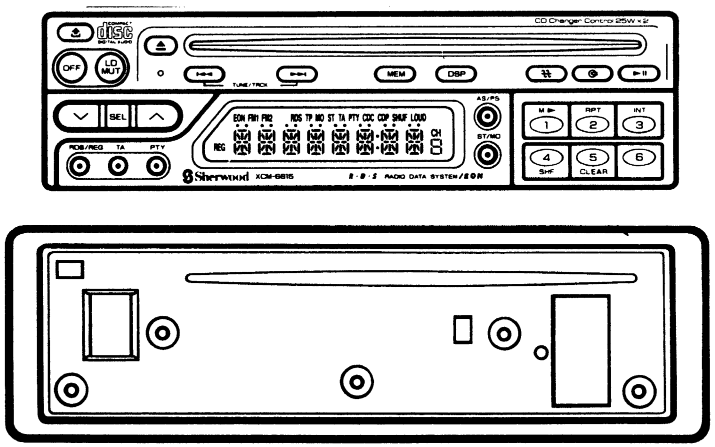
■ Program Play Button

- After programming, press this button ⑧ to play from the Program No. 1 to Program No. 32. The display screen will indicate 'PO' and the programmed track number.
- To quickly find a programmed track, press ② or ③ either to Search forwards or back wards.
- Press this button again to stop the programmed play. The player will change to the normal play mode, and will begin normal play at that point. To restart the programmed play, press this button again, the player will start to play the program No. 1 Track.

■ Clear Button (Erasing the Program)

It is possible to erase all tracks programmed.
To erase all tracks:
Press the clear button ⑨ for more 5 seconds, and all tracks being played will be erased.

5. Detachable Front Panel Section



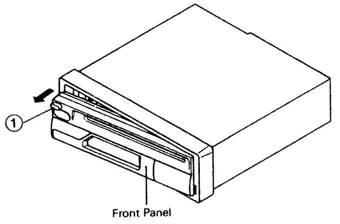
6. Using the Removale Front Panel

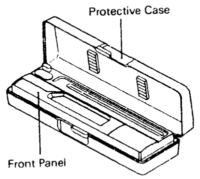
The front panel of this unit can be removed to prevent theft. If the front panel is removed, a red light flashes.

■ Detaching the Front Panel

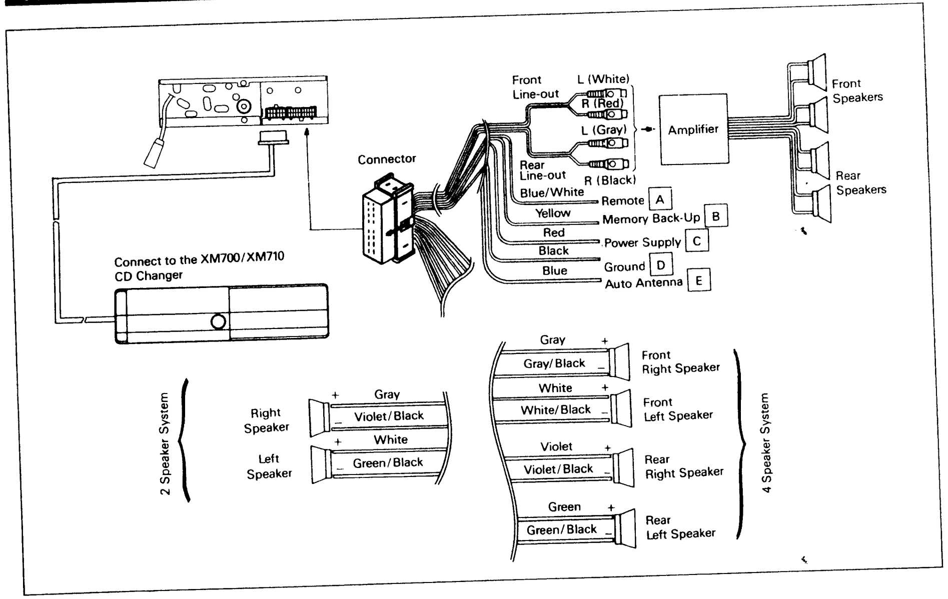
1. Press Release button ①, and the left-hand side of the panel will eject.
2. To remove the front panel, pull its left-hand side towards you.
- Take care not to put pressure on the display or drop the front panel.

3. For safekeeping keep the front panel that is removed in the supplied protective case.


①
Front Panel


Protective Case
Front Panel

7. Wire Connection


Connector
Connect to the XM700/XM710 CD Changer
Front Line-out
L (White)
R (Red)
L (Gray)
Rear Line-out
R (Black)
Amplifier
Front Speakers
Rear Speakers
Blue/White
Remote A
Yellow
Memory Back-Up B
Red
Power Supply C
Black
Ground D
Blue
Auto Antenna E
2 Speaker System
Right Speaker
Left Speaker
+
Gray
_
Violet/Black
+
White
_
Green/Black
Gray +
Gray/Black _
Front Right Speaker
White +
White/Black _
Front Left Speaker
Violet +
Violet/Black _
Rear Right Speaker
Green +
Green/Black _
Rear Left Speaker
4 Speaker System

Disassembly Instructions

1. To remove the Detachable Front Panel. (Fig. 1)

1) Press release buttom ⓐ and the left-hand side of the panel will eject.
2) To remove the detachable front panel, pull its left-hand side towards you.
   - Take case not to put pressure on the display or drop the detachable front panel.
3) For safekeeping the detachable front panel that is removed the supplied protective case.

2. To remove the Top Cover. (Fig. 1)

1) Detach the **4** points hooks from the guide panel.
2) Pull back the decoration panel and left in the direction shown by the arrow.
3) Remove **2** screws ⓑ from the Heat Sink.
4) Pull back the top cover and lift in the direction of the arrow.

3. To remove the Bottom Cover. (Fig. 1)

1) Turn the unit up side down.
2) Remove **2** screws ⓒ from the back and side of the bottom cover and remove the cover by pulling the cover in the direction shown by the arrow.

4. To remove the CDP Mechanism. (Fig. 2)

1) Remove **5** screws ⓓ from the guide panel.
2) Lift the guide panel in the direction shown by the arrow.
3) Remove **4** screws ⓔ from the CDP mechanism and main chassis.
4) Detach the assembly connectors from P.C. Board.
5) Lift the deck in the direction shown by the arrow.

5. To remove the Main P.C. Board. (Fig. 3)

1) Remove **4** screws ⓕ from the Main chassis and Heat Sink.
2) Detach the IC bracket and Heat Sink lift in the direction shown by the arrow.
3) Turn the unit up side down.
4) Detach the **1** soldered point from the main P.C. Board.
5) Lift the detachable P.C. Board in the direction shown by the arrow.
6) Remove 5 screws ⓖ from the main P.C. Board.
7) Pull back the main P.C Board and lift in the direction shown by the arrow.

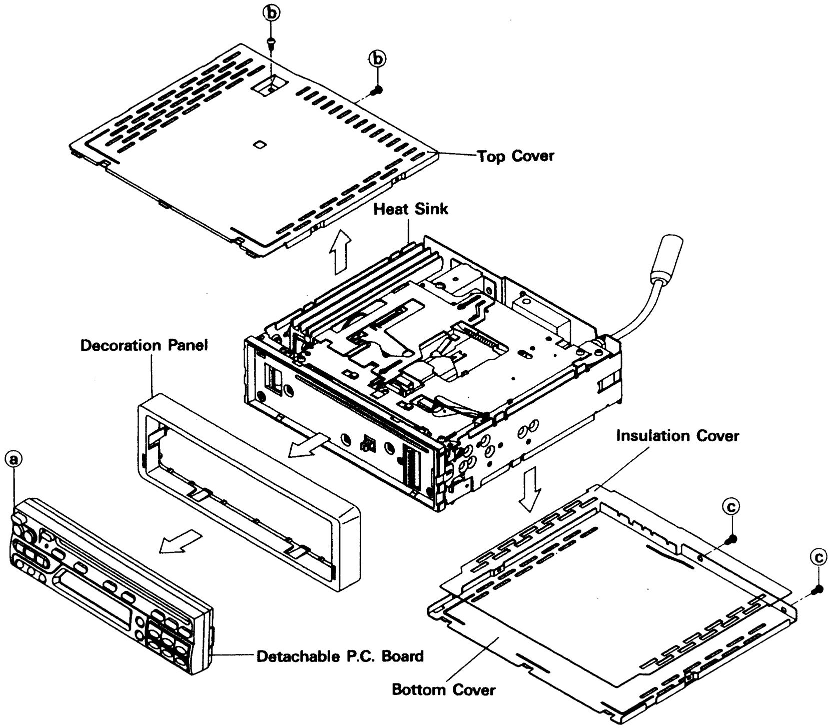

ⓑ
ⓑ
Top Cover
Heat Sink
Decoration Panel
Insulation Cover
ⓐ
ⓒ
ⓒ
Detachable P.C. Board
Bottom Cover

Figure. 1

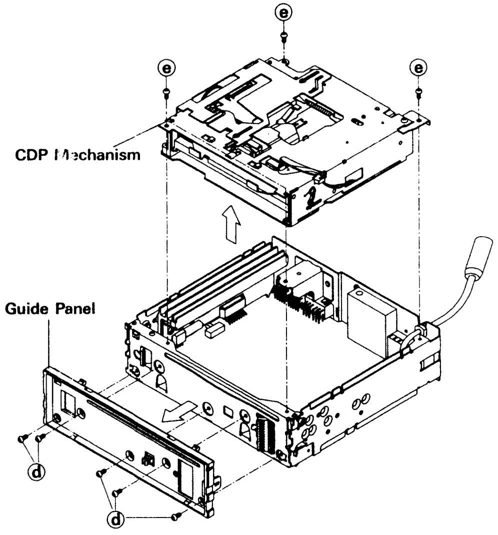

ⓔ
ⓔ
ⓔ
CDP Mechanism
Guide Panel
ⓓ
ⓓ

Figure. 2

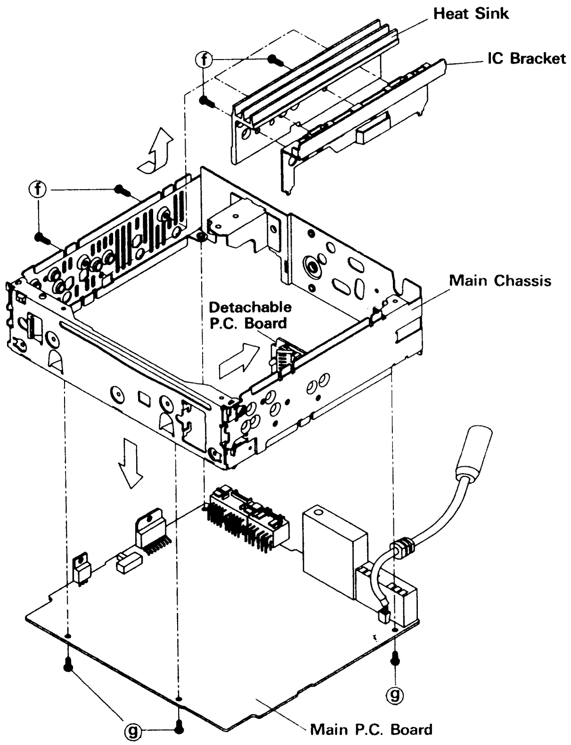
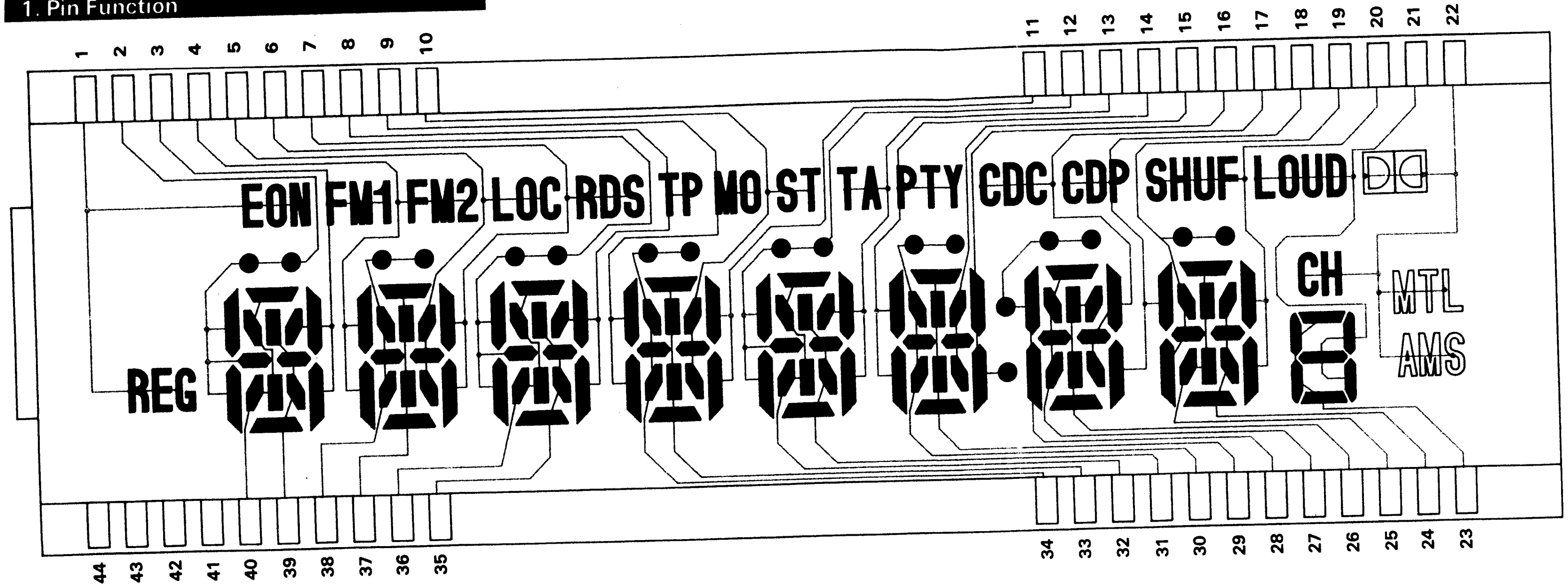

Heat Sink
IC Bracket
ⓕ
ⓕ
Main Chassis
Detachable P.C. Board
ⓖ
ⓖ
Main P.C. Board

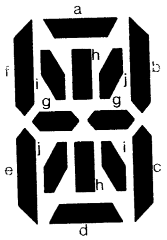
Figure. 3

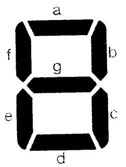
LCD Display Internal Diagram & Pin Function

1. Pin Function

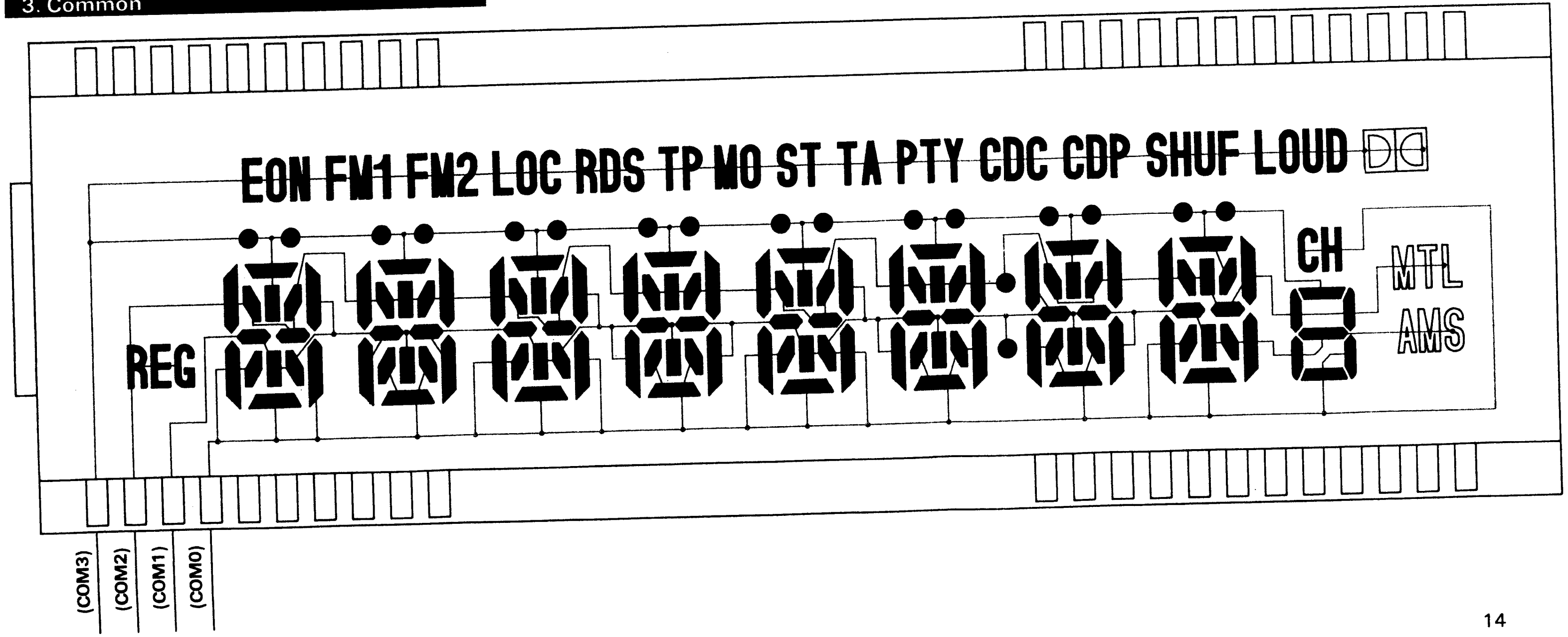

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
EON
FM1
FM2
LOC
RDS
TP
MO
ST
TA
PTY
CDC
CDP
SHUF
LOUD
CH
MTL
AMS
REG
44
43
42
41
40
39
38
37
36
35
34
33
32
31
30
29
28
27
26
25
24
23

2. Segment


a
h
f
i
j
b
g
g
e
j
i
c
h
d

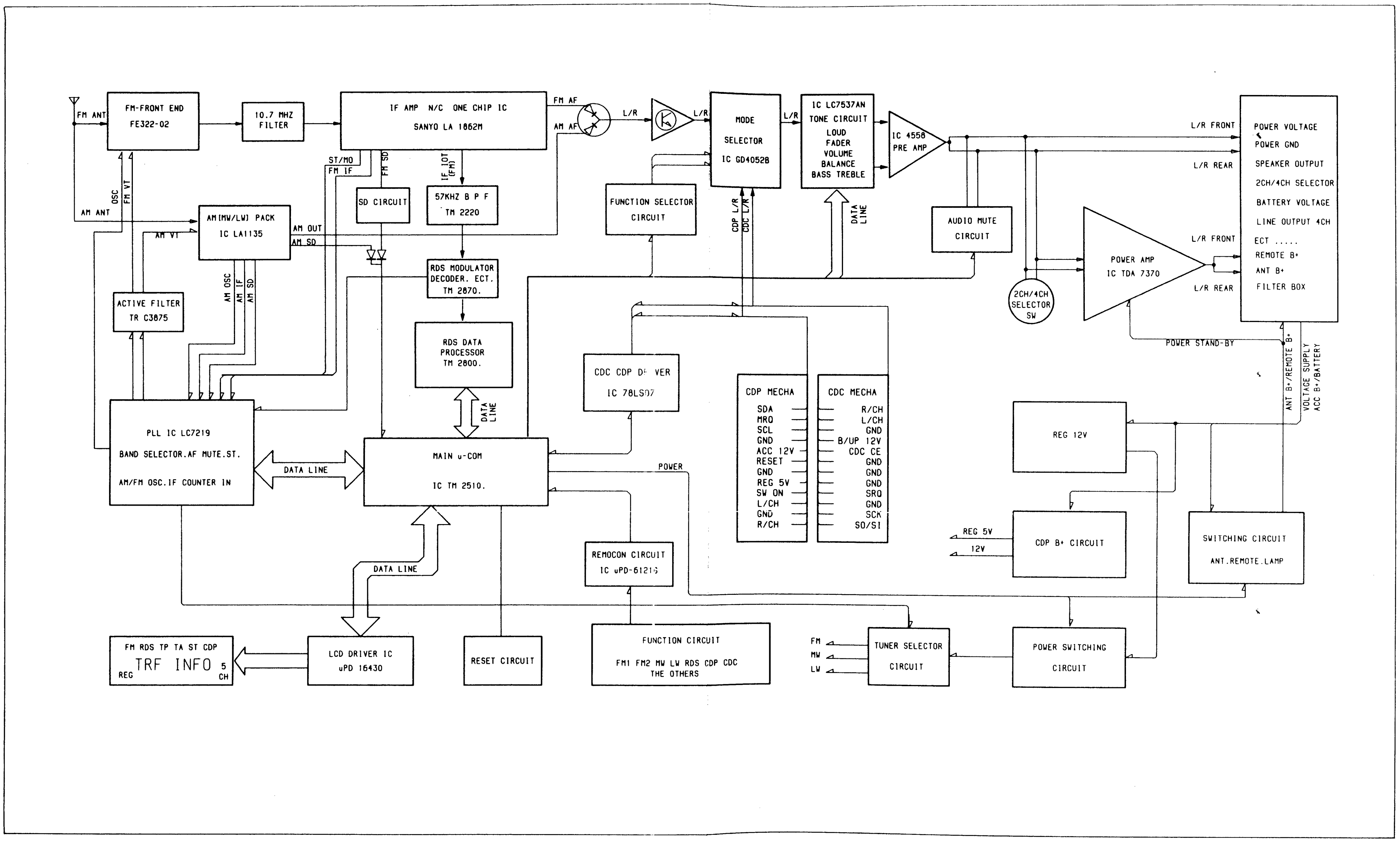


3. Common

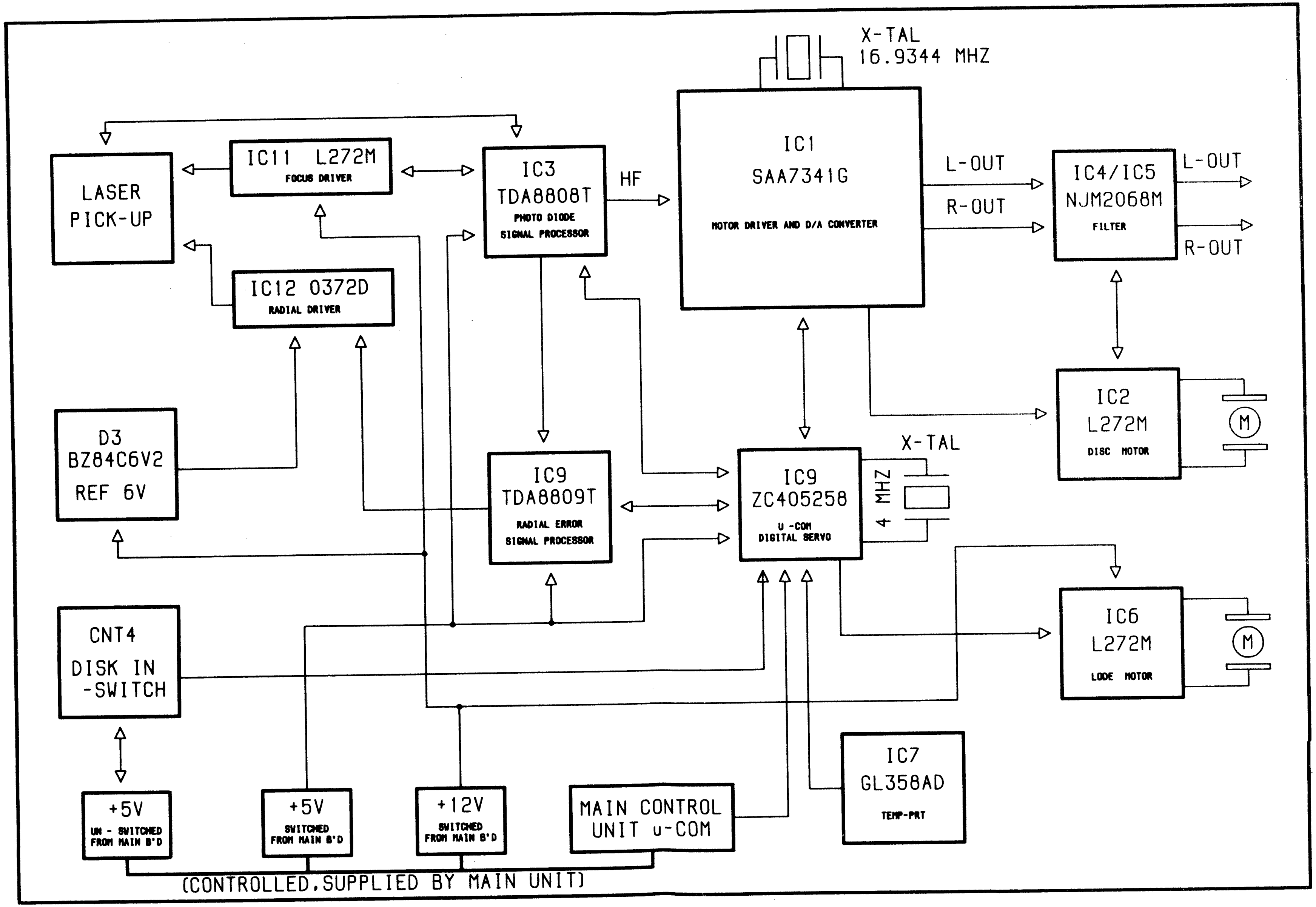

EON
FM1
FM2
LOC
RDS
TP
MO
ST
TA
PTY
CDC
CDP
SHUF
LOUD
CH
MTL
AMS
REG
(COM3)
(COM2)
(COM1)
(COM0)

Block Diagram

1. Main Section


FM ANT
FM-FRONT END
FE322-02
10.7 MHZ FILTER
IF AMP N/C ONE CHIP IC
SANYO LA 1862M
FM AF
AM AF
L/R
L/R
MODE SELECTOR
IC GD4052B
L/R
IC LC7537AN
TONE CIRCUIT
LOUD
FADER
VOLUME
BALANCE
BASS TREBLE
IC 4558
PRE AMP
L/R FRONT
L/R REAR
POWER VOLTAGE
POWER GND
SPEAKER OUTPUT
2CH/4CH SELECTOR
BATTERY VOLTAGE
LINE OUTPUT 4CH
ECT .....
REMOTE B+
ANT B+
FILTER BOX
ST/MO
FM IF
FM SD
IF IOT (FM)
OSC
FM VT
AM ANT
AM(MW/LW) PACK
IC LA1135
AM VT
AM OUT
AM SD
SD CIRCUIT
57KHZ B P F
TM 2220
FUNCTION SELECTOR CIRCUIT
CDP L/R
CDC L/R
DATA LINE
AUDIO MUTE CIRCUIT
L/R FRONT
POWER AMP
IC TDA 7370
L/R REAR
2CH/4CH SELECTOR SW
RDS MODULATOR DECODER. ECT.
TM 2870.
AM OSC
AM IF
AM SD
ACTIVE FILTER
TR C3875
RDS DATA PROCESSOR
TM 2800.
DATA LINE
CDC CDP DRIVER
IC 78LS07
CDP MECHA
SDA
MRQ
SCL
GND
ACC 12V
RESET
GND
REG 5V
SW ON
L/CH
GND
R/CH
CDC MECHA
R/CH
L/CH
GND
B/UP 12V
CDC CE
GND
GND
GND
SRQ
GND
SCK
SO/SI
POWER STAND-BY
ANT B+/REMOTE B+
VOLTAGE SUPPLY
ACC B+/BATTERY
PLL IC LC7219
BAND SELECTOR.AF MUTE.ST.
AM/FM OSC.IF COUNTER IN
DATA LINE
MAIN u-COM
IC TM 2510.
POWER
REG 12V
REMOCON CIRCUIT
IC uPD-6121G
REG 5V
12V
CDP B+ CIRCUIT
SWITCHING CIRCUIT
ANT.REMOTE.LAMP
DATA LINE
FM RDS TP TA ST CDP
REG TRF INFO 5 CH
LCD DRIVER IC
uPD 16430
RESET CIRCUIT
FUNCTION CIRCUIT
FM1 FM2 MW LW RDS CDP CDC
THE OTHERS
FM
MW
LW
TUNER SELECTOR CIRCUIT
POWER SWITCHING CIRCUIT

2. CDP Section


X-TAL
16.9344 MHZ
LASER
PICK-UP
IC11 L272M
FOCUS DRIVER
IC3
TDA8808T
PHOTO DIODE
SIGNAL PROCESSOR
HF
IC1
SAA7341G
MOTOR DRIVER AND D/A CONVERTER
L-OUT
R-OUT
IC4/IC5
NJM2068M
FILTER
L-OUT
R-OUT
IC12 0372D
RADIAL DRIVER
IC2
L272M
DISC MOTOR
M
D3
BZ84C6V2
REF 6V
IC9
TDA8809T
RADIAL ERROR
SIGNAL PROCESSOR
IC9
ZC405258
U -COM
DIGITAL SERVO
X-TAL
4 MHZ
CNT4
DISK IN
-SWITCH
IC6
L272M
LODE MOTOR
M
IC7
GL358AD
TEMP-PRT
+5V
UN - SWITCHED
FROM MAIN B'D
+5V
SWITCHED
FROM MAIN B'D
+12V
SWITCHED
FROM MAIN B'D
MAIN CONTROL
UNIT u-COM
(CONTROLLED,SUPPLIED BY MAIN UNIT)

Circuit Descriptions

1. Main Section

TM2870 (RDS Demodulator/IC7)

Pin No.	Pin Name	I/O	Description
1	CLOCK	O	RDS clock line
2	DATA	O	RDS data line
3	RELOCK	I	Unlock port
4	SRB	I	
5	SKTIME	I	Port to change time of SK-ID ON/OFF
6, 7	N.C		
8	MDSEL	I	Test port
9	TSMSEL1	I	
10	TSMSEL2	I	
11	MCPOUT	O	Master clock port
12	MCP-O	O	Master clock port connected to external
13	MCP-I	I	Master clock port connected to external element
14	GND	I	Ground
15	RDS-ID	O	RDS indication
16	RDS-ID	O	
17	RSYNC	I	Input for signal quality indicater
18	SK-ID	O	ARI indication
19	TS1	I	Test poet
20	TS2	I	
21	TS3	I	
22	TS4	I	
23	TS5	I	
24	TS6	I	
25	INTST	I	
26	N.C		
27	COMPS	I	RDS composite signal
28	VDD		+5V Acc

TM2800 (RDS Data Processing /IC12)

Pin No.	Pin Name	I/O	Description
1	N.C		
2	SCK	O	DTS serial data
3	SO	O	
4	SI	I	
5	SELECT M/S	I	Port to select Music/Speech
6	P-0	I	Port to select mode
7	P-1	I	
8	P-2	I	
9	SELECT TP/TA	I	Port to select TP/TA
10	SELECT TP	I	Port to select TP
11	SELECT TA	I	Port to select TA
12	SELECT RSYNC	I	Port to select Rsync
13	O OUT	O	4.332 MHz Oscillator
14	XT1	I	A 8.664MHz crystal is connected between these pins, controlling the internal clock oscillator.
15	XT2	O	
16	GND		
17	TEST	I	
18	V-DET	I	Reset port
19	RDS CLK	I	RDS clock line
20	RDS DATA	I	RDS data line
21	UNLOCK	O	Unlock port
22	TP/TA	O	TP/TA indication
23	M/S	O	Music/Speech indication
24	TP	O	TP indication
25	TA	O	TA indication
26	RSYNC	O	Signal quality indication
27	CHP	O	DTS serial data
28	N.C		
29	SREQ	I	DTS serial data
30	CE	I	+5V Acc
31	CE	I	
32	VDD	I	+5V Backup

TM2510 (DTS LSI/IC16)

Pin No.	Pin Name	I/O	Description
1	SDO	I	SD Level Check
2	AV REF	I	Reference Voltage 5V
3	VDD		+5V Backup
4	VDD		
5	K4	I	Function Key Input Data
6	K5	I	
7	K6	I	
8	K7	I	
9	ILLUMI	O	N.C(Illumination control)
10	STB	O	LCD and Audio data Output
11	DATA	O	LCD driver, Audio, E.EPROM serial data line
12	SYNC	O	
13	BUSY	I	LCD Driver serial data
14	SI	I	N.C(E.EPROM serial data)
15	SEC	I	5V Connection
16	SRQ	I	CDC Control Data
17	SI	I	CDC Data Input
18	SO	O	CDC Data Output
19	SCK	I/O	CDC Clock Data
20	CDP-ON	I	CDC Disc Insert Check
21	D.P-SRQ	O	RDS Data Processor Control
22	AUDIO-CE	O	Volume IC LA7537 Control
23	E.EPROM-CE	O	N.C
24	LOND		N.C(Loundness control)
25	TAPE	I	N.C
26	TAPE L/R	I	N.C(Ground)
27	FF	I	N.C(Ground)
28	MTL	I	N.C(Ground)
29	NR/MONO	O	ST/MONO Control ST : H, MONO : L
30	MTL/LO	O	N.C
31	AMS	O	N.C
32	REPEAT	O	N.C
33	GND		Ground
34	MODE	O	N.C
35	FUN 1	O	Function mode, CDP : H, CDC,AUX : L
36	FUN 2	O	
37	TUNER	O	Function mode, TUNER(FM, MW,LW) : H
38	POWER	O	Function mode, Power ON : H
39	STB-ON	O	N.C
40	CDC-CE	O	CDC ON : LOW

Pin No.	Pin Name	I/O	Description
41	CDP-CE	O	CDP ON : LOW
42	BEEP	O	N.C(Beep sound)
43	MUTE	O	Function Key ON : Active Low
44	DO	O	PLL Data Output
45	ALARM	O	No TA : alarm
46	DI	I	PLL Data Input
47	MRQ	I	RDS DI Control : Low
48	D.P-CHP	I	RDS Processor Control
49	REMOCON	I	Remocon Data Input
50	SI	I	CDP, CDC serial data
51	SO	O	
52	SCK	O	
53	CE	I	u-COM Working Check
54	GND		Ground
55	XT1		N.C
56	XT2		N.C
57	GND		Ground
58	X1		X-TAL Frequency : 4.19430MHz
59	X2		
60	RESET	I	Reset Key ON : Active Low
61	PLL CLK	O	PLL serial data
62	N.C		N.C
63	PLL-CE	O	PLL serial data
64	CDP-MRQ	O	TA Check
65	KS7	O	Key Source
66	KS6	O	
67	KS5	O	N.C
68	KS4	O	Key source
69	KS3	O	N.C
70	KS2	O	
71	KS1	O	Key Source
72	KS0	O	
73	GND		Ground
74	K0	I	5V B+
75	K1	I	
76	K2	I	
77	K3	I	
78	MUTE		N.C(External mute)
79	SDREF1	I	Ground
80	SDREFL	I	Ground

2. CDP Section

SAA7341GF (CMOS Digital Decoding IC/IC1)

Pin No.	Pin Name	Type	Description
1	D0	I/O	Data inputs/outputs to external RAM
2	D1	I/O	
3	D2	I/O	
4	D3	I/O	
5	D4	I/O	
6	D5	I/O	
7	D6	I/O	
8	D7	I/O	
9	A0	O	Address outputs to external RAM
10	A1	O	
11	A2	O	
12	A3	O	
13	A4	O	
14	A5	O	
15	A6	O	
16	A7	O	
17	A8	O	
18	A9	O	
19	A10	O	
20	A11	O	
21	A12	O	
22	WE	O	Write enable : output signal to external RAM(Active LOW)
23	R/A	I/O	Request/acnowledge: input/output microprocessor interface.
24	DA	I/O	Microprocessor interface data input/output line.
25	CL	I	Microprocessor interface clock input debounced by two 4.2336MHz clock cycles.
26	MHAL	I	Hall effect detector for motor: input for motot reversal, with internal pull-up 50k ohms.
27	VDDD		+5V supply for digital audio output (D08M) and motor speed control(MSC) output buffers.
28	PWMA	O	Puise width modulated motot control acceleration signal: output active during acceleration. Single ended mode output.
29	PWMB	O	pulse with modualted motor control brake signal: output active dunng braking
30	MACC	O	motor accelerate signal
31	MBRA	O	motor brake signal
32	DOBM	O	biphase-mark digital audio output
33	VSSD	O	ground for digital audio output and motor speed control output
34	HFD	I	high-frequency detector
35	VSSA		analogue ground front end
36	PO	O	phase detector
37	OC	I	VCO control
38	HFI	I	non-inverting data slicer input
39	HFI	I	inverting data slicer input
40	CFB	O	data slicer feedback output to capacitor
41	VDDA		+5V analogue supply for front rnd

Pin No.	Pin Name	Type	Description
42	IREF	O	current reference output
43	OUTL	O	left channel output
44,45	N.C		
46	VDDL		+5V analogue supply for left channel integrator and op-amp.
47	DE2L		pin 2 for external de-emphasis capacitor abd resistor
48	VSSL		analogue ground for left channel integrateor and op-amp.
49	DE1L		pin 1 for external de-emphasis capacitor abd resistor
50	VSSDACL		analogue ground for DAC
51	VREFL		internal reference voltage node for DAC left channel requiring an external decoupling capacitor
52	VREFR		internal reference voltage node for DAC right channel requiring an external decoupling capacitor
53	VSSDACR		analogue ground for DAC
54	DE1R		pin 1 for external de-emphasis capacitor and resistor
55	VSSR		analogue ground for right channel integrator and op-amp.
56	DE2R		pin 2 for external de-emphasis capacitor and resistor
57	VDDR		+5V analogue supply for the right channel integrator and op-amp.
58,59	N.C		
60	OUTR	O	right channel output
61,62	N.C		
63	DEEM	O	output for external de-emphasis switches
64	KO	O	output pulse(LOW) used to active external kill circuit curing power on/off
65	KTC	I/O	connection external capacitor used the timing of the kill pulse at power on
66	TEST1	O	these pins should be left open circuit
67	TEST2	O	
68	TEST3	O	
69	TEST4	O	
70	ST	I	Standby mode, input active LOW. Internal 50k ohm pull-up resistor.
71	XIN	I	input from crystal osc or external clock input(16.9344MHz)
72	XOUT	O	output to clock crystal
73	VSS		ground for digital section
74	TEST5	O	this pin should be left open circuit
75	TEST6	I	these pins should be tied HIGH
76	TEST7	I	
77	TEST8	I	
78	TEST9	I	
79	VDD		+5V supply for digital section
80	AM	I	This pin is normally held HIGH.

TDA8808T (Photo Diode Signal Processor/IC3)

Pin No.	Pin Name	Description
1	GCHF	Gain control input HF amplifier. Current output from HF amplitude detector.
2	VP	Positive supply volyage.
3	HFout	HF amplifier and equalizer voltage output
4	DET	HF detector voltage input
5	Sc	Starting up capacitor input
6	Si/RD	On/off control(start input); ready signal output(starting up p rocedure successful)
7	Beq	Equalizer reference current input
8	Bgc	DC and LF gain control reference current input
9	FOC START	Focus normalizing circuit satrting current
10	PLLH	PLL on hold output
11	TL	Track loss output
12	DODS	Drop out detector suppression input
13	Vext	Negative supply connection for FE and FElag output stage;also substrate connection
14	LPF	Low pass filter for 1ret, used in track loss (TL) detector and LF gain control
15	FE	Current output of normalized, switched focus error signal
16	FElag	Current output of switched focus error signal, intended for lag network
17	LO	Laser amplifier current output
18	LM	Laser monitor diode input
19	GCLF	Gain control input for AC and LF amplifiers. Current output from LF amplitude detector
20	Re2	Summation of amplified currents from D3 and D4
21	Re1	Summation of amplified currents from D1 and D2
22	D2	Current inputs to DC and LF photo diode
23	D1	amplifier
24	D3	Current inputs to DC and LF photo diode
25	D4	amplifier
26	HFin	Current input to HF amplifier
27	GND	Ground connection of device
28	DEC	Decoupling input (internal bypass)

TDA8809T (Radial Error Signal Processor/IC9)

Pin No.	Pin Name	Description
1	Vp	Positive supply voltage
2	Cosc1	Frequency setting capacitors for oscillator
3	Cosc2	
4	Rwob	Wobble generator input
5	Rosc	Biassing resistor for oscillator frequency and internal ampliyude
6	DIV4	Divide by 4 input
7	REdig	Digital output of sign (Re2, Re1)
8	B3	
9	B2	Input control bits for off-, catch-,
10	B1	play-status and DAC output current
11	B0	
12	Vext(%)	Positive external voltage input
13	Vext(-)	Negative external voltage input
14	GND	Negative supply connection
15	RADout	Current output of amplified (Re2,Re1) input currents
16	REin	radial error input
17	RElag	Voltage cutput of integrated (Re2,Re1) input currents
18	Lag	Connection of integrated capacitor for (Re1, Re2) input currents
19	Lead	Lead output
20	Vref	Internal reference voltage output
21	AGC	gain control input for radial error signal
22	RDAC	Biassing resistor for current output for track jumping(3-1/2 bits)
23	offset in	offset control input for radial offset
24	offset out	offset control output for radial offset
25	CLPF	Low-pass filter for Re1 and Re2, used for radial offset control
26	CHPF	High-pass filter for Re1 and Re2, used for radial offset control
27	Re1	Input for amplified currents from photo-diodes D1 and D2
28	Re2	Input for amplified currents Photo-diodes D3 and D4

Alignment Instructions

Equipment Required

1. AM/FM Standard Signal Generator
2. FM IF Sweep Generator
3. Stereo Signal Generator
4. Oscilloscope
5. SSVM (Output Meter)
6. DC Power Supply
7. Frequency Counter
8. Standard Tape

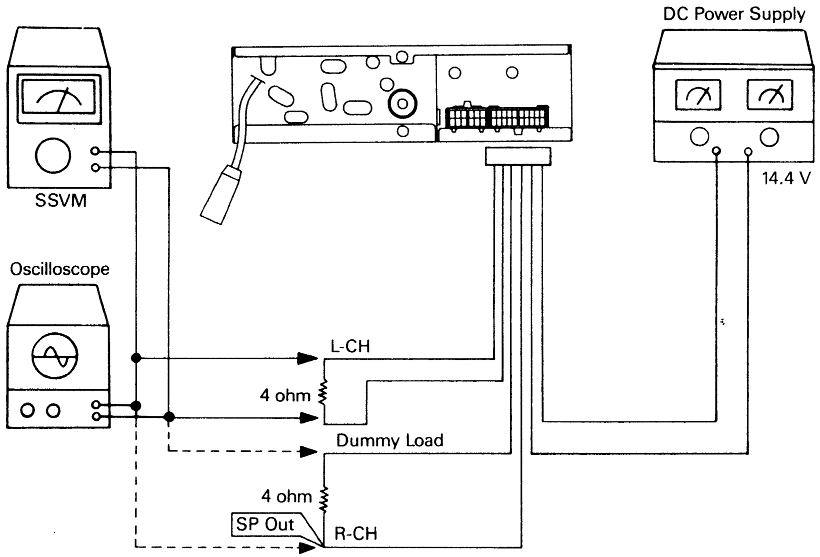
Important

1. Non-ferrous tools should be used for this alignment.
2. Signal should be kept as low as possible to avoid clipping.
3. 400Hz modulation with 30% amplitude is to be used for AM standard modulator (400Hz with 75kHz deviation for FM).
4. Output impedance of signal generator should be matched with the impedance of dummy antenna.

Tuner Alignment Pre-setting.

Pre-setting of the frequency at each adjustment point will make the tuning adjustment easier.
AM Presettings are : 530kHz, 600kHz, 1000kHz, 1400kHz, 1620kHz.
FM Presettings are : 90.1MHz, 98.1MHz, 106.1MHz.

TEST EQUIPMENT CONNECTIONS



Standard Adjustment Condition

a. Power Supply··················14.4V DC
b. AM/FM Selector Switch··················AM or FM
c. Tone Control··················Flat
d. Balance Control··················Center
e. Volume··················Adjust to get 1.0W power output level
f. Load Impedance··················4 ohm
g. Equipment Connections··················See above test equipment connection

Electrical Adjustments

1. Electrical Adjustment Points

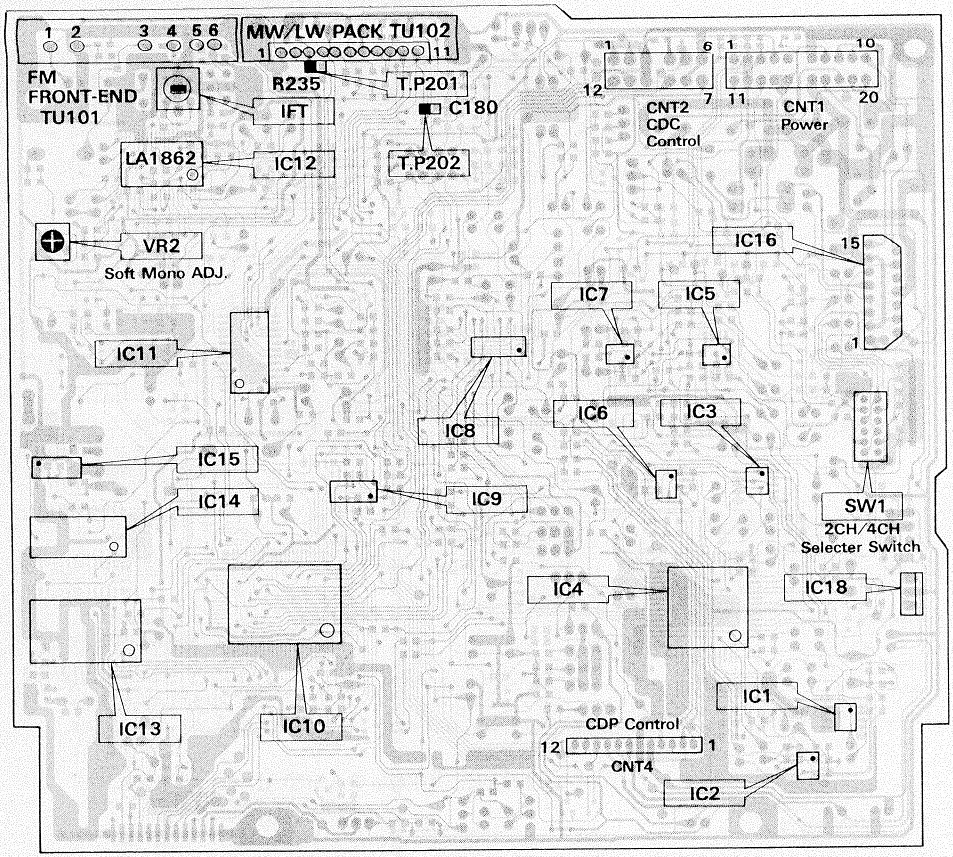

1 2 3 4 5 6
MW/LW PACK TU102
1
11
FM FRONT-END TU101
R235
T.P201
IFT
C180
LA1862
IC12
T.P202
1
6
1
10
12
7
11
20
CNT2 CDC Control
CNT1 Power
VR2
Soft Mono ADJ.
IC16
15
IC7
IC5
1
IC11
IC6
IC3
IC8
IC15
IC14
IC9
SW1
2CH/4CH Selecter Switch
IC4
IC18
IC1
CDP Control
12
1
CNT4
IC13
IC10
IC2

Figure. 4
Main P.C. Board Points

∗ Bottom Pattern View
∗ Top Pattern View

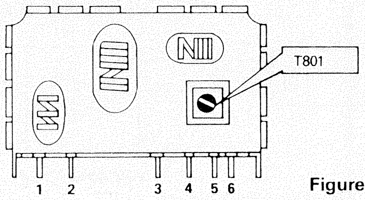

T801
1
2
3
4
5
6

Figure. 5
FM Front-end Point (TU101)

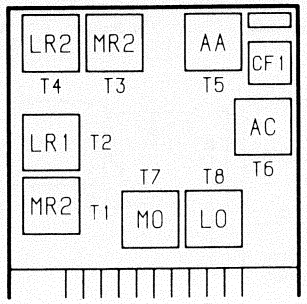

LR2
MR2
AA
CF1
T4
T3
T5
LR1
T2
AC
T6
T7
T8
MR2
T1
MO
LO

Figure. 6
MW/LW Front-end Points (TU102)

Note : Both MW/LW and FM Front-end are pre-adjust at the factory. Additional adjustments will be required when some parts are changed or replaced.

2. Radio Section

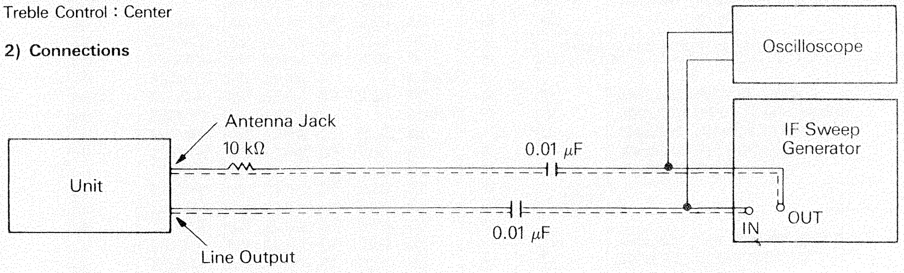
I. FM ADJUSTMENT

1. IF Adjustment

1) Setting

Band Selector : FM-ST
Local/DX Selector : DX
Bass Control : Center
Treble Control : Center
Volume Control : Minimum
Balance Control : Center
Fader Control : Center

2) Connections


Oscilloscope
IF Sweep Generator
Antenna Jack
10 kΩ
0.01 μF
Unit
OUT
IN
0.01 μF
Line Output

3) Adjustment

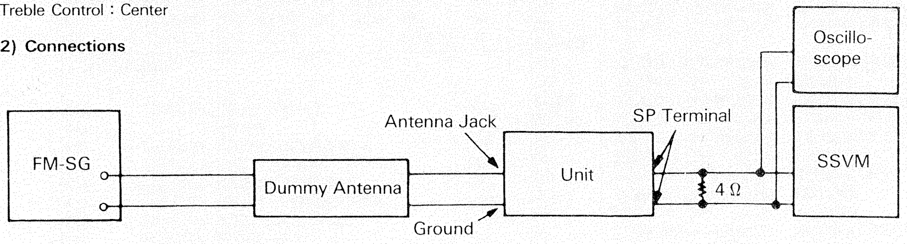
Signal Generator	Dial Setting	Adjust	Reading	Remarks
10.7 MHz	98.0 MHz	T801 FM-IFT		Turn the FM-IFT fully counterclockwise.
		IFT1 FM-IFT A		Adjust the IFT-A and FM-IFT slowly clockwise so that the output wave becomes a symmetrical sinewave.

2. Sensitivity Adjustment

1) Setting

Band Selector : FM-ST
Local/DX Selector : DX
Bass Control : Center
Treble Control : Center
Volume Control : Approximately Center
Balance Control : Center
Fader Control : Center

2) Connections


Oscillo-scope
Antenna Jack
SP Terminal
FM-SG
Dummy Antenna
Unit
SSVM
4 Ω
Ground

3) Adjustment

Item	Signal Generator		Dial Setting	Adjust	Reading	Remarks
	Frequency	Modulation				
1	98.0 MHz	1 kHz, 60% Mod. 1 mV	98.0 MHz	VOLUME	2.0 V	
2	98.0 MHz	1 kHz, 60% Mod. 3 μV	98.0 MHz	T 801	Max.	

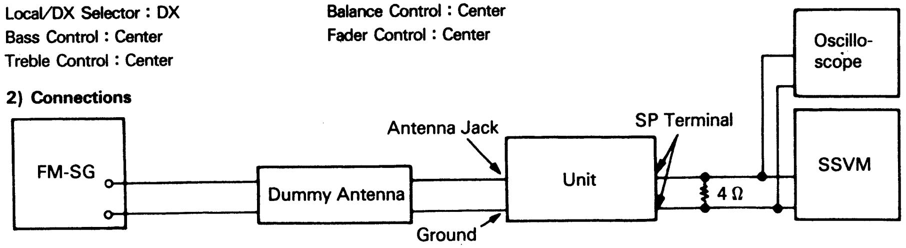
3. Soft Mono Adjustment

1) Setting

Band Selector : FM-ST
Local/DX Selector : DX
Bass Control : Center
Treble Control : Center

Volume Control : Center
Balance Control : Center
Fader Control : Center

2) Connections



3) Adjustment

Signal Generator		Dial Setting	Adjust	Reading	Remark
Frequency	Modulation				
98.0 MHz 10μV	Pilot : 19 kHz 10% L+R : 1 kHz 50%	98.0 MHz	VR1	R-CH : −10dB	See **Figure. 4** for adjustment point.

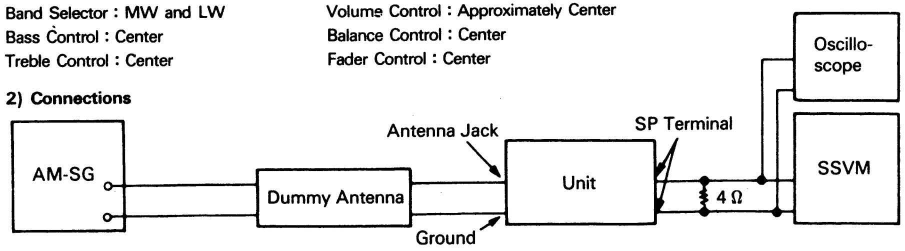
II. MW/LW IF/TRACKING ADJUSTMENT

1) Setting

Band Selector : MW and LW
Bass Control : Center
Treble Control : Center

Volume Control : Approximately Center
Balance Control : Center
Fader Control : Center

2) Connections



3) MW Adjustments

Item		Signal Generator		Dial Setting	Adjust	Reading	Remarks
		Frequency	Modulation				
1	OSC Coil	520 kHz	1 kHz 30% 30μV, Mod.	520 kHz	T7 (MO)	1.3V	See **Fig. 4** adjust point T.P201.
2	IF	999 kHz	1 kHz 30% 30μV, Mod.	999 kHz	T5, T6 (AA, AC)	Max.	See **Figure. 4** for adjustment point. T.P202
3	Tracking	603 kHz	1 kHz 30% 30μV, Mod.	603 kHz	T1, T3 (MR1, MR2)	Max.	

4) LW Adjustments

Item		Signal Generator		Dial Setting	Adjust	Reading	Remarks
		Frequency	Modulation				
1	OSC Coil	144 kHz	1 kHz 30% 30μV, Mod.	144 kHz	T8 (LO)	1.3V	See **Figure. 4** for adjustment point.**(T.P202)**
2	Tracking	164 kHz	1 kHz 30% 30μV, Mod.	164 kHz	T2, T4	Max. (LR1, LR2)	

Electrical Parts Lists

Ass'y, P.C.B Main

Ref. No.	Part No.	Description	Position
• Integrated Circuits			
IC1	2168220133	NJM4558M, Op-Amplifier	B2
IC2	2168220133	NJM4558M, Op-Amplifier	B1
IC3	2168220133	NJM4558M, Op-Amplifier	B3
IC4	2168217138	LC7537AN, Electronic Volume Control LSI	B / C2
IC5	2168220133	NJM4558M, Op-Amplifier	B4
IC6	2168220133	NJM4558M, Op-Amplifier	C3
IC7	2168220133	NJM4558M, Op-Amplifier	C4
IC8	2168027107	BU4052BF, Dual 4-CH Analog Multiplexer	D4
IC9	2138001122	GD74LS07D, Chip, Hex Non-Inverted Buffers	E3
IC10	2138300208	TM2510, DTS IC	E2 / 3
IC11	2138017134	LC7219M, PLL IC	E4
IC12	2168417116	LA1862M, FM IF Amp./Det.	F5
IC13	2138300209	TM2800, RDS Data Processing IC	F / G2
IC14	2138300210	TM2870, RDS Demodulator	F / G3
IC15	2138300211	TM2220, RDS Filter	F / G3
IC16	2168003111	TDA7370, 2CH 20W Power IC	A4
IC17		Not used	
IC18	2168601101	GD7805, Regulator IC	A2 / 3
• Transistors			
Q1	2038022101	PNP 2SB1237 R-OHM(K)	A3
Q2	2207606007	NPN KRC104S Chip SOT23 KEC	B3
Q3~Q8	2207606003	NPN KTD1304 Chip SOT23 KEC	B4
Q9,Q10	2207606003	NPN KTD1304 Chip SOT23 KEC	C4
Q11	2207206007	PNP KRA106S Chip SOT23 KEC	C4
Q12	2207606007	NPN KRC104S Chip SOT23 KEC	C5
Q13	2038022101	PNP 2SB1237 R-OHM(K)	C5
Q14	2207606007	NPN KRC104S Chip SOT23 KEC	C5
Q15	2228422101	NPN 2SD1858 R-OHM(K)	C2
Q16	2207206007	PNP KRA106S Chip SOT23 KEC	C1
Q17	2038022101	PNP 2SB1237 R-OHM(K)	C2
Q18~Q20	2228422101	NPN 2SD1858 R-OHM(K)	C2
Q21	2208622107	NPN 2SC1740S R-OHM(K)	C3
Q22	2207206007	PNP KRA106S Chip SOT23 KEC	C1
Q23	2238402105	PNP KSR2205 SAMSUNG	C3
Q24,Q25	2038022101	PNP 2SB1237 R-OHM(K)	C3
Q26	2228422101	NPN 2SD1858 R-OHM(K)	D6
Q27	2207606007	NPN KRC104S Chip SOT23 KEC	D2
Q28	2207606001	NPN KTC3875 Chip SOT23 KEC	D1
Q29,Q30	2207606001	NPN KTC3875 Chip SOT23 KEC	D5
Q31	2207606007	NPN KRC104S Chip SOT23 KEC	D3
Q32	2207206007	PNP KRA106S Chip SOT23 KEC	D3
Q33	2207606007	NPN KRC104S Chip SOT23 KEC	D3
Q34	2207606001	NPN KTC3875 Chip SOT23 KEC	D1
Q35	2207606003	NPN KID1304 Chip SOT23 KEC	D5
Q36	2207206001	PNP KTA1504 Chip SOT23 KEC	D3
Q37	2207606003	NPN KRD1304 Chip SOT23 KEC	D5
Q38	2207606007	NPN KRC104S Chip SOT23 KEC	D1
Q39	2207606007	NPN KRC104S Chip SOT23 KEC	D / E3
Q40	2038022101	PNP 2SB1237 R-OHM(K)	A3
Q41,Q42	2207606001	NPN KTC3875 Chip SOT23 KEC	E4
Q43	2038022101	PNP 2SB1237 R-OHM(K)	E1
Q44	2207606001	NPN KTC3875 Chip SOT23 KEC	E4
Q45	2207606012	NPN KTC111S Chip SOT23 KEC	F3
Q45	2207606012	NPN KTC111S Chip SOT23 KEC	F3
Q46		Not used Chip SOT23	
Q47	2207606001	NPN KTC3875 Chip SOT23 KEC	E1
Q48	2207606001	NPN KTC3875 Chip SOT23 KEC	E4
Q49~Q51		Not used	
Q52	2207206001	PNP KTA1504 Chip SOT23 KEC	F4

Ref. No.	Part No.	Description	Position
Q53	2207606001	NPN KTC3875 Chip SOT23 KEC	F2
Q54	2207606001	NPN KTC3875 Chip SOT23 KEC	F1
Q55	2207606001	NPN KTC3875 Chip SOT23 KEC	F4
Q56,Q57		Not used	
Q58	2207606001	NPN KTC3875 Chip SOT23 KEC	F4
Q59	2207206001	PNP KTA1504 Chip SOT23 KEC	F4
Q60	2207606001	NPN KTC3875 Chip SOT23 KEC	F / G4
• Diodes			
D1	2058322101	Switching 1N4148(M) 60V/500mW	B2
D2~D4	2058106100	Rectifier 1N4002 100V/1A	B5
D5	2057306002	Switching KDS184 80V/300mW Chip SOT-23	C3
D6	2057506004	Zener DZ-5.6V 5.6V/200mW	C2
D7	2057306002	Switching KDS184 80V/300mW Chip SOT-23	C1
D8	2057506004	Zener DZ-5.6V 5.6V/200mW	D6
D9	2057506004	Zener DZ-5.6V 5.6V/200mW	D3
D10	2057306002	Switching KDS184 80V/300mW Chip SOT-23	D3
D11	2258599122	Zener DZ-11.0BS 11V/500mW	D2
D12	2057306001	Switching KDS181 80V/300mW Chip SOT-23	D5
D13,D14	2057306005	Switching KDS226 80V/300mW Chip SOT-23	D3
D15,D16	2057306002	Switching KDS184 80V/300mW Chip SOT-23	E5
D17	2257506010	Zener DZ-10V 10V/200mW	E4
D18	2057306002	Switching KDS184 80V/300mW Chip SOT-23	F3
D19~D21		Not used	
D22	2057306005	Switching KDS226 80V/300mW Chip SOT-23	F4
D23	2057306002	Switching KDS184 80V/300mW Chip SOT-23	E2
D24,D25		Not used	
D26	2057306001	Switching KDS181 80V/300mW Chip SOT-23	E2
D27		Not used	
D28~D30	2057306002	Switching KDS184 80V/300mW Chip SOT-23	E2
D31	2057306005	Switching KDS226 80V/300mW Chip SOT-23	E2
D32		Not used	F2
D33,D34	2057306002	Switching KDS184 80V/300mW Chip SOT-23	F3
D35	2057306002	Switching KDS184 80V/300mW Chip SOT-23	F2
D36	2058106100	Rectifier 1N4002 100V/1A	D5
• Filter			
CF1	3938001039	Ceramic Filter, SFE 10.7MS3LH	E6
• Crytal			
X-1	3908104288	X-TAL, 4.194364MHz, ATS-49 / U	E3
X-2	3938201930	X-TAL, 7.2MHz, ATS	E4
X-3		Not used	
X-4	3938131670	Resonator, CSB 456F23	F6
X-5	3908104289	X-TAL, 8.6640MHz, HC-49 / U	F2
• Coils			
L1	2648610182	Inductor Coil, 100μ H	F / G5
L2	2648610182	Inductor Coil, 100μ H	E3
L3	2648610182	Inductor Coil, 100μ H	F3
L4	2838001090	Coil, FM IFT, White, K5532GW	F6
L5	2648610182	Inductor Coil, 100μ H	B5
• Semi-Fixed Variable Resistors			
VR1		Not used	
VR2	3248020443	B-200K, EVM-DJAA03B25, Soft Mono Adjust	G5
• Capacitors			
C1	3539103820	Ceramic 0.01 μF 50V Chip K	B5

Ref. No.	Part No.	Description					Position
C2	3479347031	Electrolytic	47 µF	16V	SE	M	A2
C3	3479347031	Electrolytic	47 µF	16V	SE	M	A1
C4	3409310239	Electrolytic	1000 µF	16V	SG	M	A/B5
C5	3409322229	Electrolytic	2200 µF	16V	SG	M	A/B5
C6	3409310239	Electrolytic	1000 µF	16V	SG	M	B2/3
C7	3409310239	Electrolytic	1000 µF	16V	SG	M	B2
C8	3409310239	Electrolytic	1000 µF	16V	SG	M	B6
C9	3479110975	Electrolytic	1 µF	50V	SE	M	B1
C10~C13	3479110975	Electrolytic	1 µF	50V	SE	M	B4
C14	3479347031	Electrolytic	47 µF	16V	SE	M	B1
C15	3479147935	Electrolytic	4.7 µF	16V	SE	M	B3
C16	3479110975	Electrolytic	1 µF	50V	SE	M	B3
C17	3479110035	Electrolytic	10 µF	16V	SE	M	B2
C18	3479110975	Electrolytic	1 µF	50V	SE	M	B3
C19	3479110115	Electrolytic	100 µF	6.3V	SE	M	B5
C20	3479147935	Electrolytic	4.7 µF	16V	SE	M	B4
C21	3479147935	Electrolytic	4.7 µF	16V	SE	M	B3
C22	3479110975	Electrolytic	1 µF	50V	SE	M	B2
C23	3409310239	Electrolytic	1000 µF	16V	SG	M	B5
C24	3479110035	Electrolytic	10 µF	16V	SE	M	B3
C25	3479147875	Electrolytic	0.47 µF	50V	SE	M	B2
C26,C27	3479110035	Electrolytic	10 µF	16V	SE	M	B2
C28,C29	3479147935	Electrolytic	4.7 µF	16V	SE	M	B4
C30	3479110035	Electrolytic	10 µF	16V	SE	M	B4
C31	3479110975	Electrolytic	1 µF	50V	SE	M	B3
C32	3479147875	Electrolytic	0.47 µF	50V	SE	M	B3
C33	3479110975	Electrolytic	1 µF	50V	SE	M	B3
C34	3479110035	Electrolytic	10 µF	16V	SE	M	B1
C35	3409310239	Electrolytic	1000 µF	16V	SG	M	B5
C36	3479110036	Electrolytic	10 µF	16V	SE	M	B3
C37	3479110975	Electrolytic	1 µF	50V	SE	M	B1
C38	3479110975	Electrolytic	1 µF	50V	SE	M	B3
C39,C40	3539104060	Ceramic	0.1 µF	50V	Chip	Z	B2
C41	3539182820	Ceramic	0.0018 µF	50V	Chip	K	B2
C42	3479110035	Electrolytic	10 µF	16V	SE	M	B3
C43	3479110975	Electrolytic	1 µF	50V	SE	M	B3
C44	3479147035	Electrolytic	47 µF	16V	SE	M	C5
C45	3409310239	Electrolytic	1000 µF	16V	SG	M	C5
C46,C47	3539104060	Ceramic	0.1 µF	50V	Chip	Z	C3
C48	3539182820	Ceramic	0.0018 µF	50V	Chip	K	C3
C49	3539101210	Ceramic	100 pF	50V	Chip	J	C10
C50	3479110035	Electrolytic	10 µF	16V	SE	M	C3
C51	3539224530	Ceramic	0.22 µF	50V	Chip	Z	C2
C52	3539101210	Ceramic	100 pF	50V	Chip	J	C3
C53	3479147035	Electrolytic	47 µF	16V	SE	M	C4/5
C54	3479147035	Electrolytic	47 µF	16V	SE	M	G4
C55,C56	3479122975	Electrolytic	2.2 µF	50V	SE	M	C5
C57	3479322129	Electrolytic	220 µF	10V	SG	M	C6
C58~C60	3479110035	Electrolytic	10 µF	16V	SE	M	C4
C61	3479110975	Electrolytic	1 µF	50V	SE	M	C3
C62		Not used					C5
C63	3479147035	Electrolytic	47 µF	16V	SE	M	C4
C64	3479110035	Electrolytic	10 µF	16V	SE	M	C4
C65,C66	3479122975	Electrolytic	2.2 µF	50V	SE	M	C5
C67	3479122975	Electrolytic	2.2 µF	50V	SE	M	D4
C68	3479122975	Electrolytic	2.2 µF	50V	SE	M	D3
C69	3479147035	Electrolytic	47 µF	16V	SE	M	D5
C70,C71	3479147035	Electrolytic	47 µF	16V	SE	M	D2
C72	3539470210	Ceramic	47 pF	50V	Chip	J	D5
C73,C74	3479110975	Electrolytic	1 µF	50V	SE	M	D4
C75	3479110975	Electrolytic	1 µF	50V	SE	M	D3
C76	3479133975	Electrolytic	3.3 µF	50V	SE	M	D1
C77	3479110035	Electrolytic	10 µF	16V	SE	M	D6
C78	3479110975	Electrolytic	1 µF	50V	SE	M	D5

Ref. No.	Part No.	Description					Position
C79	3479122035	Electrolytic	22 µF	16V	SE	M	D2/3
C80	3479110035	Electrolytic	10 µF	16V	SE	M	D6
C81	3479110975	Electrolytic	1 µF	50V	SE	M	D4
C82		Not used					D2
C83	3479133975	Electrolytic	3.3 µF	50V	SE	M	D1
C84	3479322129	Electrolytic	220 µF	10V	SG	M	D2
C85	3479147035	Electrolytic	47 µF	16V	SE	M	D2
C86	3479110975	Electrolytic	1 µF	50V	SE	M	D5
C87	3539470210	Ceramic	47 pF	50V	Chip	J	D6
C88,C89	3479110975	Electrolytic	1 µF	50V	SE	M	D5
C90	3479147035	Electrolytic	47 µF	16V	SE	M	D4/5
C91	3479110035	Electrolytic	10 µF	16V	SE	M	D6
C92,C93	3479110975	Electrolytic	1 µF	50V	SE	M	D5
C94	3479147035	Electrolytic	47 µF	16V	SE	M	E4
C95	3479110035	Electrolytic	10 µF	16V	SE	M	E6
C96		Not used					
C97	3479110115	Electrolytic	100 µF	6.3V	SE	M	E2
C98,C99	3479122975	Electrolytic	2.2 µF	50V	SE	M	E4
C100	3479147035	Electrolytic	47 µF	16V	SE	M	E6
C101	3479147035	Electrolytic	47 µF	16V	SE	M	E5
C102	3539222820	Ceramic	0.0022 µF	50V	CHIP	K	E5
C103	3539222820	Ceramic	0.0022 µF	50V	CHIP	K	E5
C104	3479147035	Electrolytic	47 µF	16V	SE	M	E4
C105	3479110975	Electrolytic	1 µF	50V	SE	M	E5
C106	3479147875	Electrolytic	0.47 µF	50V	SE	M	E6
C107	3539103820	Ceramic	0.01 µF	50V	CHIP	K	E5
C108	3479110975	Electrolytic	1 µF	50V	SE	M	E5
C109,C110	3539153820	Ceramic	0.015 µF	50V	CHIP	K	E5
C111	3479110975	Electrolytic	1 µF	50V	SE	M	E5
C112	3479147935	Electrolytic	4.7 µF	16V	SE	M	E5
C113	3479147035	Electrolytic	47µF	16V	SE	M	E5
C114	3539222820	Ceramic	0.0022µF	50V	CHIP	K	F5
C115	3539821210	Ceramic	820pF	50V	CHIP	J	F4
C116	3539332820	Ceramic	0.0033µF	50V	CHIP	K	F4/5
C117	3479122035	Electrolytic	22µF	16V	SE	M	F2
C118	3479133975	Electrolytic	3.3 µF	50V	SE	M	F4
C119	3479122035	Electrolytic	22 µF	16V	SE	M	F4/5
C120	3479110975	Electrolytic	1 µF	50V	SE	M	F2
C121	3479110125	Electrolytic	100 µF	10V	SE	M	F6
C122	3479110975	Electrolytic	1 µF	50V	SE	M	F5
C123	3479147035	Electrolytic	47 µF	16V	SE	M	F3
C124	3479122875	Electrolytic	0.22 µF	50V	SE	M	F5
C125	3479122975	Electrolytic	2.2 µF	50V	SE	M	F3
C126	3479110975	Electrolytic	0.1 µF	50V	SE	M	F5
C127	3539332820	Ceramic	0.0033 µF	50V	CHIPK	K	
C128	3479122035	Electrolytic	22 µF	16V	SE	M	
C129~C150		Not used					
C151,C152	3539821210	Ceramic	820 pF	50V	CHIP	J	a9
C153	3539821210	Ceramic	820 pF	50V	CHIP	J	a10
C154	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	a/b11
C155	3539821210	Ceramic	820 pF	50V	CHIP	J	b9
C156	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	b7
C157	3539101210	Ceramic	100 pF	50V	CHIP	J	b12
C158	3539122820	Ceramic	0.0012 µF	50V	CHIP	K	b11
C159	3539103820	Ceramic	0.01 µF	50V	CHIP	K	b7
C160	3539101210	Ceramic	100 pF	50V	CHIP	J	b11
C161	3539122820	Ceramic	0.0012 µF	50V	CHIP	K	b10
C162	3539103820	Ceramic	0.01 µF	50V	CHIP	K	b7
C163	3539470210	Ceramic	47 pF	50V	CHIP	J	b9
C164	3539470210	Ceramic	47 pF	50V	CHIP	J	c9
C165		Not used					
C166	3479110035	Electrolytic	10 µF	16V	SE	M	C4
C167,C168	3479110035	Electrolytic	10 µF	16V	SE	M	C4
C169	3479110035	Electrolytic	10 µF	16V	SE	M	B4

Ref. No.	Part No.	Description					Position
C170		Not used					c7
C171	3539103820	Ceramic	0.01 µF	50V	CHIP	K	B5
C172	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	c9
C173		Not used					c8
C174,C175	3539470210	Ceramic	47 pF	50V	CHIP	J	c9
C176	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	c7
C177~C179		Not used					
C180	3539333820	Ceramic	0.033 µF	50V	CHIP	K	d7
C181		Not used					
C182	3539103820	Ceramic	0.01 µF	50V	CHIP	K	e9
C183		Not used					
C184	3539103820	Ceramic	0.01 µF	50V	CHIP	K	e9
C185	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	e9
C186	3539223820	Ceramic	0.022 µF	50V	CHIP	K	e7
C187	3539330210	Ceramic	33 pF	50V	CHIP	J	e10
C188,C189	3539270210	Ceramic	27 pF	50V	CHIP	J	e9
C190	3539330210	Ceramic	33 pF	50V	CHIP	J	e10
C191		Not used					
C192	3539471210	Ceramic	470 pF	50V	CHIP	J	e7
C193	3539473820	Ceramic	0.047 µF	50V	CHIP	K	e8
C194	3539821210	Ceramic	820 pF	50V	CHIP	J	f8
C195	3539223820	Ceramic	0.022 µF	50V	CHIP	K	f8
C196		Not used					
C197	3539103820	Ceramic	0.01 µF	50V	CHIP	K	f8
C198	3539120210	Ceramic	12 pF	50V	CHIP	J	f7
C199	3539223820	Ceramic	0.022 µF	50V	CHIP	K	f8
C200	3539682820	Ceramic	0.0068 µF	50V	CHIP	K	f8
C201		Not used					
C202,C203	3539223820	Ceramic	0.022 µF	50V	CHIP	K	f7
C204	3539223820	Ceramic	0.022 µF	50V	CHIP	K	f9
C205	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	f12
C206		Not used					
C207	3539103820	Ceramic	0.01 µF	50V	CHIP	K	f8
C208	3539223820	Ceramic	0.022 µF	50V	CHIP	K	f8
C209	3539102210	Ceramic	0.001 µF	50V	CHIP	J	g11
C210,C211	3539270210	Ceramic	27 pF	50V	CHIP	J	g11
C212	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	f11
C213	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	F3
C214	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	f10
C215	3539103820	Ceramic	0.01 µF	50V	CHIP	K	g10
C216	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	f10
C217	3539103820	Ceramic	0.01 µF	50V	CHIP	K	F5
C218	3539104060	Ceramic	0.1 µF	50V	CHIP	Z	F2
C219	3539223820	Ceramic	0.022 µF	50V	CHIP	K	e11

- Resistors (All Resistors are Carbon Film 1/10W Chip Type unless otherwise noted.)

Ref. No.	Part No.	Description	Position
R1	3099103870	10k ohm	A3
R2,R3	3099222870	2.2k ohm	A3
R4,R5	3099103870	10k ohm	B4
R6,R7	3099105870	1M ohm	B3
R8	3099183870	18k ohm	B5
R9	3099472870	4.7k ohm	B5
R10	3099153870	15k ohm	B2
R11	3099332870	3.3k ohm	B2
R12		Not used	
R13	3099472870	4.7k ohm	B5
R14	3099183870	18k ohm	B5
R15	3099102870	1k ohm	
R16	3099472870	4.7k ohm	B5
R17	3099472870	4.7k ohm	C5
R18~R20		Not used	C5
R21	3099332870	3.3k ohm	C3
R22	3099153870	15k ohm	C3
R23	3099104870	100k ohm	C4

Ref. No.	Part No.	Description	Position
R24	3099822870	8.2k ohm	C3
R25	3099103870	10k ohm	C3
R26	3099104870	100k ohm	C3
R27,R28	3099102870	1k ohm	D2
R29,R30	3099222870	2.2k ohm	D2
R31	3089472970	4.7k ohm 1/5 W J type	C6/5
R32	3089472970	4.7k ohm 1/5 W J type	D6/5
R33	3099222870	2.2k ohm	D5
R34	3099474870	470k ohm	D5
R35	3099154870	150k ohm	D1
R36	3099271870	270 ohm	D2
R37	3099222870	2.2k ohm	D6
R38	3099474870	470k ohm	D6
R39	3099104870	100k ohm	D5
R40	3099821870	820 ohm	D5
R41	3099331870	330 ohm	D1
R42,R43	3099104870	100k ohm	D5
R44	3099821870	820 ohm	D5
R45	3099104870	100k ohm	D5
R46~R50	3099473870	47k ohm	D4
R51,R52	3099333870	33k ohm	D5
R53	3099473870	47k ohm	D6
R54		Not used	
R55	3099473870	47k ohm	E1
R56	3099472870	4.7k ohm	E1
R57,R58	3099102870	1k ohm	E3
R59,R60	3099682870	6.8k ohm	E5
R61	3099472870	4.7k ohm	E3
R62		Not used	
R63	3099472870	4.7k ohm	E4
R64	3099513870	51k ohm	E5
R65	3099223870	22k ohm	E2
R66	3099822870	8.2k ohm	F5
R67		Not used	
R68	3099104870	100k ohm	F4
R69	3099223870	22k ohm	F4
R70,R71	3099103870	10k ohm	F1
R72	3099563870	56k ohm	F4
R73	3099123870	12k ohm	F4
R74	3099682870	6.8k ohm	F5
R75	3099103870	10k ohm	F5
R76		Not used	
R77	3099104870	100k ohm	F4
R78		Not used	
R79	3099332870	3.3k ohm	F4
R80	3099222870	2.2k ohm	F1
R81	3099104870	100k ohm	F2
R82	3099393870	39k ohm	F5
R83	3099183870	18k ohm	F5
R84	3099104870	100k ohm	F4
R85	3099472870	4.7k ohm	F4
R86		Not used	
R87,R88	3099472870	4.7k ohm	F4
R89	3099104870	100k ohm	F5
R90~R100		Not used	
R101	3099100870	10 ohm	a10
R102	3099473870	47k ohm	a9
R103,R104	3099473870	47k ohm	a10
R105	3099100870	10 ohm	a10
R106	3099104870	100k ohm	a11
R107,R108	3099102870	1k ohm	a11
R109,R110	3099105870	1M ohm	a11
R111,R112	3099103870	10k ohm	b9
R113	3099473870	47k ohm	b9

Ref. No.	Part No.	Description	Position
R114,R115	3099102870	1k ohm	b10
R116	3099103870	10k ohm	b11
R117	3099103870	10k ohm	b12
R118	3099104870	100k ohm	a12
R119~R122	3099472870	4.7k ohm	b9
R123	3099473870	47k ohm	b8
R124	3099822870	8.2k ohm	b12
R125	3099105870	1M ohm	b11
R126	3099183870	18k ohm	b7
R127	3099471870	470 ohm	b9
R128	3099105870	1M ohm	b10
R129	3099471870	470 ohm	b9
R130	3099183870	18k ohm	b7
R131,R132	3099471870	470 ohm	b9
R133	3099822870	8.2k ohm	b9
R134	3099103870	10k ohm	b / c8
R135	3099822870	8.2k ohm	c9
R136	3099103870	10k ohm	c9
R137~R139	3099104870	100k ohm	c9
R140	3099103870	10k ohm	c10
R141		Not used	
R142	3099103870	10k ohm	c9
R143	3099103870	10k ohm	c8
R144	3099222870	2.2k ohm	c8
R145	3099104870	100k ohm	c10
R146,R147	3099822870	8.2k ohm	c9
R148~R152		Note used	
R153	3099103870	10k ohm	c9
R154	3099104870	100k ohm	c10
R155,R156	3099103870	10k ohm	c9
R157	3099103870	10k ohm	c11
R158,R159	3099103870	10k ohm	c8
R160	3099104870	100k ohm	c9
R161~R164	3099472870	4.7k ohm	c10
R165	3099222870	2.2k ohm	c11
R166	3099272870	2.7k ohm	c9
R167		Not used	c9
R168	3099222870	2.2k ohm	c / d11
R169~R171	3099100870	10 ohm	d11
R172	3099100870	10 ohm	d9
R173	3099222870	2.2k ohm	d7
R174		Not used	
R175	3099472870	4.7k ohm	d12
R176	3099103870	10k ohm	d10
R177,R178	3099472870	4.7k ohm	d10
R179	3099154870	150k ohm	d12
R180		Not used	
R181,R182	3099103870	10k ohm	d9
R183	3099102870	1k ohm	d7
R184	3099473870	47k ohm	d7
R185	3099823870	82k ohm	d9
R186	3099823870	82k ohm	d10
R187,R188	3099222870	2.2k ohm	d10
R189~R193	3099473870	47k ohm	d9
R194~R196	3099103870	10k ohm	d10
R197,R198		Not used	
R199	3099472870	4.7k ohm	d8
R200		Not used	
R201	3099222870	2.2k ohm	d12
R202,R203	3099103870	10k ohm	d11
R204	3099103870	10k ohm	d12
R205,R206	3099471870	470 ohm	d7
R207~R209	3099102870	1k ohm	d10
R210	3099472870	4.7k ohm	d / e10

Ref. No.	Part No.	Description	Position
R211~R214	3099104870	100k ohm	d / e8
R215	3099473870	47k ohm	d / e7
R216	3099103870	10k ohm	d / e7
R217		Not used	d / e7
R218	3099103870	10k ohm	e11
R219	3099102870	1k ohm	e9
R220,R221	3099562870	5.6k ohm	e9
R222	3099102870	1k ohm	e9
R223,R224	3099102870	1k ohm	e10
R225	3099103870	10k ohm	e9
R226	3099103870	10k ohm	e7
R227		Not used	e7
R228	3099104870	100k ohm	e11
R229	3099102870	1k ohm	e10
R230	3099473870	47k ohm	
R231		Not used	e10
R232	3099473870	47k ohm	e11
R233,R234		Not used	e11
R235,R236	3099102870	1k ohm	e7
R237	3099152870	1.5k ohm	e9
R238	3099472870	4.7k ohm	e9
R239	3099152870	1.5k ohm	e9
R240	3099105870	1M ohm	e9
R241	3099472870	4.7k ohm	e9
R242,R243	3099473870	47k ohm	e11
R244	3099473870	47k ohm	e8
R245	399100870	10 ohm	e8
R246		Not used	e8
R247	3099822870	8.2k ohm	e8
R248	3099472870	4.7k ohm	f9
R249	3099682870	6.8k ohm	f8
R250	3099331870	330 ohm	f8
R251	3099223870	22k ohm	f8
R252	3099101870	100 ohm	f7
R253		Not used	
R254	3099104870	100k ohm	f8
R255	3099513870	51k ohm	f8
R256		Not used	
R257	3099103870	10k ohm	f11
R258	3099562870	5.6k ohm	f7
R259	3099752870	7.5k ohm	f8
R260	3099513870	51k ohm	f8
R261		Not used	
R262	3099103870	10k ohm	f12
R263~R265		Not used	
R266	3099103870	10k ohm	f12
R267		Not used	
R268	3099822870	8.2k ohm	f9
R269	3099332870	3.3k ohm	f7
R270	3099822870	8.2k ohm	f8
R271		Not used	
R272	3099682870	6.8k ohm	f9
R273	3099472870	4.7k ohm	f9
R274	3099472870	4.7k ohm	
R275		Not used	
R276	3099472870	4.7k ohm	f10
R277~R283		Not used	
R284	3099221870	220 ohm	f11
R285~R287		Not used	
R288	3099100870	10 ohm	g8
R289		Not used	g8
R290	3099562870	5.6k ohm	f8
R291	3099222870	2.2k ohm	f9
R292~R299		Not used	

Ref. No.	Part No.	Description	Position
R300,R301	3099103870	10k ohm	c10
R302,R303	3099103870	10k ohm	c9
R304	3099102870	1k ohm	c9
R305~R511		Not used	
R512	3099103870	10k ohm	

• Others

Ref. No.	Part No.	Description	Position
FM F/E(OLD)	3928101060	FM Front-end, FE322-A02	F6
MW/LW FE(NEW)	3928801991	FM Front-end, FE323-A13	F6
MW / LW F / E	3928001020	MW / LW Front-end Module, KEA647G-S	D / E6
LED1	2309100601	LED Chip, LN1871Y5, Orange	E6
CNT1	4448400720	Connector Socket 20P, Power	B6
CNT2	4448400710	Connector Socket 12P, CDC Control	C6
CNT3		Not used	C5
CNT4	436112062442	CNT Ass'y 12P, 51004-35023, DL, 60mm	C2
CNT5	4353001810	Antenna Receptacle Ass'y 2P	F6
SW1	4618005810	Switch Slide, SLSS74KJSS4208A	A/B3/4
	4359704008	Ground Wire Ring-Strip, 80mm	
	4002622304	Main P.C. Board	

Ass'y, PCB, CDP

• Integrated Circuits

Ref. No.	Part No.	Description	Position
IC1	2108000227	SAA7341GP, DA Converter and Motor Control	B4
IC2	2168203001	L272M, Dual Power OP-Amplifier	B5
IC3	2138001126	TDA8808T, Photo Diode Signal Processor	C1 / 2
IC4	2168220138	NJM2068, Low-Noise Dual OP-Amplifier	A3
IC5	2168220138	NJM2068, Low-Noise Dual OP-Amplifier	A2
IC6	2168203001	L272M, Dual Power OP-Amplifier	E5
IC7	2168201001	GL358AD, Dual OP-Amplifier	D4
IC8	2138001128	ZC405258CFN, Main Control LSI	E4
IC9	2138001127	TDA8809T, Radial Error Signal Processor	D / E3
IC10	2138000188	PC74HCT4053T, Triple 2-CH Analog Multiplexer	E2
IC11	2168203001	L272M, Dual Power OP-Amplifier	D1 / 2
IC12	2168009106	TCA0372DPI, Dual Power OP-Amplifier	E1
IC201	2138400141	UM6264-10L, Low-Power Static RAM	a / b4

• Transistor

Ref. No.	Part No.	Description	Position
Q1,Q2	2207608001	NPN KTC 3875 Silicon, Chip SOT-23	B2
Q3	2207606016	NPN KTC 4375 Silicon, Chip SOT-89	D1
Q4	2207206001	PNP KTA 1504 Silicon, Chip SOT-23	D4
Q5	2207606001	NPN KTC 3875 Silicon, Chip SOT-23	D4
Q6	2207606001	NPN KTC 3875 Silicon, Chip SOT-23	E4

• Diodes

Ref. No.	Part No.	Description	Position
D1	2257506009	Zener Z02W-9.1 9.1V/200mW Chip SOT-23	B2
D2	2057306005	Switching KDS226 80V/300mW Chip SOT-23	B2
D3	2257506005	Zener Z02W-6.2 6.2V/200mW Chip SOT-23	B1
D4	2057306005	Switching KDS226 80V/300mW Chip SOT-23	D5
D5	2057306005	Switching KDS226 80V/300mW Chip SOT-23	D / E5
D6	2057306002	Switching KDS184 80V/300mW Chip SOT-23	D4
D7	2057306002	Switching KDS184 80V/300mW Chip SOT-23	E2

• Capasitors

Ref. No.	Part No.	Description	Position
C1	3479122875	Electrolytic 0.22 uF 50V SE M	A4
C2,C3	3479110115	Electrolytic 100 uF 6.3V SE M	A4

Ref. No.	Part No.	Description	Position
C4	3539224530	Ceramic 0.22 uF 50V CHIP Z	A4
C5	3479122115	Electrolytic 220 uF 6.3V SE M	A3
C6	3479122115	Electrolytic 220 uF 6.3V SE M	B3
C7		Not used	A3
C8	3539224530	Ceramic 0.22 uF 50V CHIP Z	A4
C9	3479122035	Electrolytic 22 uF 16V SE M	A2
C10	3479122035	Electrolytic 22 uF 16V SE M	A / B1
C11	3479147035	Electrolytic 47 uF 16V SE M	B2
C12	3479147035	Electrolytic 47 uF 16V SE M	B1
C13	3539224530	Ceramic 0.22 uF 50V CHIP Z	B1 / 2
C14	3479122975	Electrolytic 2.2 uF 50V SE M	B2
C15,C16	3479110035	Electrolytic 10 uF 16V SE M	B3
C17	3539224530	Ceramic 0.22 uF 50V CHIP Z	B3
C18	3479147035	Electrolytic 47 uF 16V SE M	B3
C19	3539224530	Ceramic 0.22 uF 50V CHIP Z	B5
C20,C21	3539224530	Ceramic 0.22 uF 50V CHIP Z	C1
C22~C24	3539224530	Ceramic 0.22 uF 50V CHIP Z	D3
C25	3539224530	Ceramic 0.22 uF 50V CHIP Z	D1 / 2
C26	3479147035	Electrolytic 47 uF 16V SE M	D1
C27,C28	3539224530	Ceramic 0.22 uF 50V CHIP Z	E1
C29	3693824195	Metal M / P 0.82 uF 63V J	E2
C30	3479147035	Electrolytic 47 uF 16V SE M	E2
C31	3692911435	Metal P / P 910 pF 50V J	E3
C32,C33	3479147035	Electrolytic 47 uF 16V SE M	E3
C34	3479147035	Electrolytic 47 uF 16V SE M	E3
C35	3692562495	Metal P / P 0.0056 uF 63V G	E3
C36	3692472495	Metal P / P 0.0047 uF 63V G	E3
C37	3539224530	Ceramic 0.22 uF 50V CHIP Z	E4
C38,C39	3539101210	Ceramic 100 pF 50V CHIP J	A3
C40	3539331210	Ceramic 330 pF 50V CHIP J	A4
C41	3539391210	Ceramic 390 pF 50V CHIP J	A3
C42,C43	3539222820	Ceramic 0.0022 uF 50V CHIP K	B3
C44	3539391210	Ceramic 390 pF 50V CHIP J	A3
C45	3539331210	Ceramic 330 pF 50V CHIP J	A3
C46	3539223820	Ceramic 0.022 uF 50V CHIP K	B1
C47	3539222820	Ceramic 0.0022 uF 50V CHIP K	B1
C48	3539221210	Ceramic 220 pF 50V CHIP J	B2
C49	3539102820	Ceramic 0.001 uF 50V CHIP K	B2
C50	3539101210	Ceramic 100 pF 50V CHIP J	B2
C51	3539223820	Ceramic 0.022 uF 50V CHIP K	B3
C52	3539221210	Ceramic 220 pF 50V CHIP J	B3
C53,C54	3539104060	Ceramic 0.1 uF 50V CHIP Z	B3
C55	3539470210	Ceramic 47 pF 50V CHIP J	B3
C56	3539222820	Ceramic 0.0022 uF 50V CHIP K	B3
C57	3539104060	Ceramic 0.1 uF 50V CHIP Z	B4
C58	3539472820	Ceramic 0.0047 uF 50V CHIP K	B4
C59~C61	3539104060	Ceramic 0.1 uF 50V CHIP Z	B4
C62	3539472820	Ceramic 0.0047 uF 50V CHIP K	B4
C63,C64	3539223820	Ceramic 0.022 uF 50V CHIP K	B5
C65	3539473210	Ceramic 0.047 uF 50V CHIP J	C2
C66	3539223820	Ceramic 0.022 uF 50V CHIP K	C2
C67	3539103210	Ceramic 0.01 uF 50V CHIP J	C2
C68	3539223820	Ceramic 0.022 uF 50V CHIP K	C2
C69	3539471210	Ceramic 470 pF 50V CHIP J	C2
C70	3539123820	Ceramic 0.012 uF 50V CHIP K	C1
C71	3539104060	Ceramic 0.1 uF 50V CHIP Z	E5
C72,C73	3539104060	Ceramic 0.1 uF 50V CHIP Z	D5
C74	3539104060	Ceramic 0.1 uF 50V CHIP Z	E4
C75	3539104060	Ceramic 0.1 uF 50V CHIP Z	D / E4
C76	3539333820	Ceramic 0.033 uF 50V CHIP K	D4
C77,C78	3539223820	Ceramic 0.022 uF 50V CHIP K	D3
C79	3539102210	Ceramic 0.001 uF 50V CHIP J	D3
C80	3539223820	Ceramic 0.022 uF 50V CHIP K	D1
C81	3539221210	Ceramic 220 pF 50V CHIP J	D1

Ref. No.	Part No.	Description	Position
C82	3539103210	Ceramic 0.01 uF 50V CHIP J	D1
C83	3539223820	Ceramic 0.022 uF 50V CHIP K	E1
C84	3539103210	Ceramic 0.01 uF 50V CHIP J	E1
C85,C86	3539470210	Ceramic 47 pF 50V CHIP J	E4
C87	3539104080	Ceramic 0.1 uF 50V CHIP Z	E5
C88	3539223820	Ceramic 0.022 uF 50V CHIP K	E4
C89~C99		Not used	
C100,C101	3539224530	Ceramic 0.22 uF 50V CHIP Z	E1
C102	3539101210	Ceramic 100 pF 50V CHIP J	A3
C103~C200		Not used	
C201,C202	3539220210	Ceramic 22 pF 50V CHIP J	b4
C203	3539223820	Ceramic 0.022 uF 50V CHIP K	b4
C204	3539224530	Ceramic 0.22 uF 50V CHIP Z	

• Resistors

Ref. No.	Part No.	Description	Position
R1	3099479870	Carbon Film Chip 4.7 ohm 1/10W J	A4
R2	3099220870	Carbon Film Chip 22 ohm 1/10W J	A4
R3	3099229870	Carbon Film Chip 2.2 ohm 1/10W J	A4
R4		Not used	
R5~R12	3099303150	Carbon Film Chip 30k ohm 1/8W F	A3
R13,R14	3099102870	Carbon Film Chip 1k ohm 1/10W J	B3
R15,R16	3099104870	Carbon Film Chip 100k ohm 1/10W J	A2
R17	3099470870	Carbon Film Chip 47 ohm 1/10W J	A1
R18,R19	3099104870	Carbon Film Chip 100k ohm 1/10W J	A1
R20	3099470870	Carbon Film Chip 47 ohm 1/10W J	A1
R21	3099472870	Carbon Film Chip 4.7k ohm 1/10W J	B1
R22	3099562870	Carbon Film Chip 5.6k ohm 1/10W J	B1
R23	3099223870	Carbon Film Chip 22k ohm 1/10W J	B1
R24	3099101870	Carbon Film Chip 100 ohm 1/10W J	B2
R25	3099102870	Carbon Film Chip 1k ohm 1/10W J	B2
R26	3099122870	Carbon Film Chip 1.2k ohm 1/10W J	B2
R27	3099272870	Carbon Film Chip 2.7k ohm 1/10W J	B2
R28,R29	3099222870	Carbon Film Chip 2.2k ohm 1/10W J	B3
R30,R31	3099223870	Carbon Film Chip 22k ohm 1/10W J	B3
R32,R33	3099182870	Carbon Film Chip 1.8k ohm 1/10W J	B4
R34,R35	3099473870	Carbon Film Chip 47k ohm 1/10W J	B4
R36	3099229170	Carbon Film Chip 2.2 ohm 1/8W F	C5
R37	3099472870	Carbon Film Chip 4.7k ohm 1/10W J	C2
R38	3099104870	Carbon Film Chip 100k ohm 1/10W J	C2
R39	3099123870	Carbon Film Chip 12k ohm 1/10W J	B1
R40	3099243150	Carbon Film Chip 24k ohm 1/8W F	B1
R41	3099243870	Carbon Film Chip 24k ohm 1/10W J	C1
R42	3099222150	Carbon Film Chip 2.2k ohm 1/8W F	C1
R43	3099303150	Carbon Film Chip 30k ohm 1/8W F	C1
R44~R46	3099220870	Carbon Film Chip 22 ohm 1/10W J	D1
R47	3099472870	Carbon Film Chip 4.7k ohm 1/10W J	D/E5
R48	3099102870	Carbon Film Chip 1k ohm 1/10W J	D5
R49	3099472870	Carbon Film Chip 4.7k ohm 1/10W J	D5
R50	3099472870	Carbon Film Chip 4.7k ohm 1/10W J	E5
R51	3099479870	Carbon Film Chip 4.7 ohm 1/10W J	E5
R52	3099103870	Carbon Film Chip 10k ohm 1/10W J	E5
R53	3099102870	Carbon Film Chip 1k ohm 1/10W J	D5
R54	3099103870	Carbon Film Chip 10k ohm 1/10W J	E5
R55,R56	3099220870	Carbon Film Chip 22 ohm 1/10W J	D5
R57	3099334870	Carbon Film Chip 330k ohm 1/10W J	D5
R58	3099334870	Carbon Film Chip 330k ohm 1/10W J	E5
R59,R60	3099223870	Carbon Film Chip 22k ohm 1/10W J	E4
R61	3099154870	Carbon Film Chip 150k ohm 1/10W J	D4
R62	3099562150	Carbon Film Chip 5.6k ohm 1/8W F	D4
R63	3099102870	Carbon Film Chip 1k ohm 1/10W J	D4
R64	3099682870	Carbon Film Chip 6.8k ohm 1/10W J	D4
R65	3099473870	Carbon Film Chip 47k ohm 1/10W J	D4
R66	3099103870	Carbon Film Chip 10k ohm 1/10W J	D4
R67	3099473870	Carbon Film Chip 47k ohm 1/10W J	D4
R68	3099332870	Carbon Film Chip 3.3k ohm 1/10W J	D4
R69	3099222870	Carbon Film Chip 2.2k ohm 1/10W J	D4
R70	3099154870	Carbon Film Chip 150k ohm 1/10W J	D4
R71	3099512870	Carbon Film Chip 5.1k ohm 1/10W J	D3
R72	3099183150	Carbon Film Chip 18k ohm 1/8W F	D4
R73	3099132150	Carbon Film Chip 1.3k ohm 1/8W F	E4
R74	3099104870	Carbon Film Chip 220k ohm 1/10W J	D3
R75,R76	3099223870	Carbon Film Chip 22k ohm 1/10W J	D3
R77	3099823870	Carbon Film Chip 82k ohm 1/10W J	D2
R78	3099224870	Carbon Film Chip 220k ohm 1/10W J	D1
R79	3099243870	Carbon Film Chip 24k ohm 1/10W J	D2
R80	3099912870	Carbon Film Chip 9.1k ohm 1/10W J	E2
R81	3099123150	Carbon Film Chip 12k ohm 1/8W F	D1
R82	3099183150	Carbon Film Chip 18k ohm 1/8W F	E1
R83	3099101870	Carbon Film Chip 100 ohm 1/10W J	D1
R84	3099220870	Carbon Film Chip 22 ohm 1/10W J	D1
R85	3099479870	Carbon Film Chip 4.7 ohm 1/10W J	D1
R86	3099229170	Carbon Film Chip 2.2 ohm 1/8W J	D / E1
R87	3099220870	Carbon Film Chip 22 ohm 1/10W J	E1
R88~R90	3099562120	Carbon Film Chip 5.6k ohm 1/8W F	E1
R91	3099820170	Carbon Film Chip 82 ohm 1/8W J	E1
R92	3099562120	Carbon Film Chip 5.6k ohm 1/8W F	E1
R93	3029229470	Metal Film 2.2 ohm 1W J	E1
R94		Not used	
R95	3099229170	Carbon Film Chip 2.2 ohm 1/8W J	E3
R96	3099473150	Carbon Film Chip 47k ohm 1/8W F	E3
R97	3099183150	Carbon Film Chip 18k ohm 1/8W F	E3
R98	3099223870	Carbon Film Chip 22k ohm 1/10W J	E4
R99	3099104870	Carbon Film Chip 100k ohm 1/10W J	E4
R100	3099101870	Carbon Film Chip 100 ohm 1/10W J	E4
R101	3099223870	Carbon Film Chip 22k ohm 1/10W J	E4
R102	3099224870	Carbon Film Chip 220k ohm 1/10W J	E4
R103	3099229170	Carbon Film Chip 2.2 ohm 1/10W J	E5
R104	3099472870	Carbon Film Chip 4.7k ohm 1/10W J	E5
R105	3099220870	Carbon Film Chip 22 ohm 1/10W J	E5
R106	3099562870	Carbon Film Chip 5.6k ohm 1/10W J	E5
R107	3099470870	Carbon Film Chip 47 ohm 1/10W J	E5
R108	3099222870	Carbon Film Chip 2.2k ohm 1/10W J	E5
R109	3099229170	Carbon Film Chip 2.2 ohm 1/8W J	E4
R110	3099103870	Carbon Film Chip 10k ohm 1/10W J	A3
R111~R199		Not used	
R200	3099220870	Carbon Film Chip 22 ohm 1/10W J	E5
R201		Not used	
R202	3099224870	Carbon Film Chip 220k ohm 1/10W J	b4
R203	3099104870	Carbon Film Chip 100k ohm 1/10W J	b4

• Others

Ref. No.	Part No.	Description	Position
X-TAL1	3908101820	X-TAL, 16.9344MHz	B4
X-TAL2	3908101810	X-TAL, 4.0MHz	E4
CNT-1	4428501690	Connector Plug 4P, MKS-8304-6-0-404	A4
CNT-2	4428526640	Connector Plug 12P, 53015-1210	B1
CNT-3	4428560190	Connector Plug 14P, 5597-NAPB	C / D1
CNT-4	4428501680	Connector Plug 2P, MKS 8302-6-0-202	E2
CNT-5	4428501700	Connector Plug 2P, MKS 8242-6-0-202	D5
	4003616700	CDP P.C. Board	

Ass'y, PCB, Detachable

Ref. No.	Part No.	Description	Q'TY
	2308220118	LED, SLR34UR3, Red	
	4448400770	Connector Socket 12P, FPS-12-1.1-G.G	
	4003616504	Detachable P.C. Board	

Ass'y, PCB, Front

• Integrated Circuits

Ref. No.	Part No.	Description	Q'TY
IC1	2138006101	uPD16430GF-3B9, LCD Driver Control IC	
IC2	2138013116	uPD6121G-002, Remote Control IC	

• Transistor

Ref. No.	Part No.	Description	Q'TY
Q1	2207606001	NPN KTC 3875 Chip SOT23 Silicon	

• Diodes

Ref. No.	Part No.	Description	Q'TY
D1~D4	2057306005	Switching KDS226 Chip SOT23 Silicon	
D5	2057306002	Switching KDS184 Chip SOT23 Silicon	

• LEDs

Ref. No.	Part No.	Description	Q'TY
LED1~LED24	2309100601	LED Chip, LN1871Y5, Orange	

• Filter

Ref. No.	Part No.	Description	Q'TY
CF1	3938101890	Resonator, CRA 455	

• Switchs

Ref. No.	Part No.	Description	Q'TY
SW1~SW25	4658110001	Tact Switch, Chip, EVQ-PJ004M	

• Capasitors

Ref. No.	Part No.	Description	Q'TY
C1	3539104060	Ceramic 0.1 μF 50V CHIP Z	
C2	3539103820	Ceramic 0.01 μF 50V CHIP K	
C3		Not used	
C4	3539104060	Ceramic 0.1 μF 50V CHIP Z	
C4	3539224060	Ceramic 0.22 μF 50V CHIP Z	

• Resistors (All Resistors are Carbon Film 1/10W J Type unless otherwise noted.)

Ref. No.	Part No.	Description	Q'TY
R1~R10	3099182870	1.8k ohm	
R11,R12	3099103870	10k ohm	
R13~R16	3099182870	1.8k ohm	
R17	3099473870	47k ohm	
R18	3099104870	100k ohm	
R19	3099103870	10k ohm	
R20~R23	3099472870	4.7k ohm	
R24	3099272870	2.7k ohm	
R25	3099392870	3.9k ohm	
R26~R30	3099224870	220k ohm	

• Others

Ref. No.	Part No.	Description	Q'TY
	2338319911	LCD, HL-6815	
LAMP1,LAMP2	2528201810	Lamp, 14V/60mA, φ3 PCB Type	
	4448400780	Connector Plug 12P, FPP-12-1.4-G.G	
	8535039810	Filter LCD	
	8553017710	Housing LCD	
	048553017811	Reflector LCD	
	8728000180	Lamp, Color Cap, 910G-20, Orange	
	4002622404	Front P.C. Board	

Ass'y CDP Mechanism

Ref. No.	Part No.	Description	Q'TY
	4471000340	CDP Mechanism, CDM-9	
	6505131110	Bracket CD-R	
	6735011110	Felt CD	

Accessory Kits

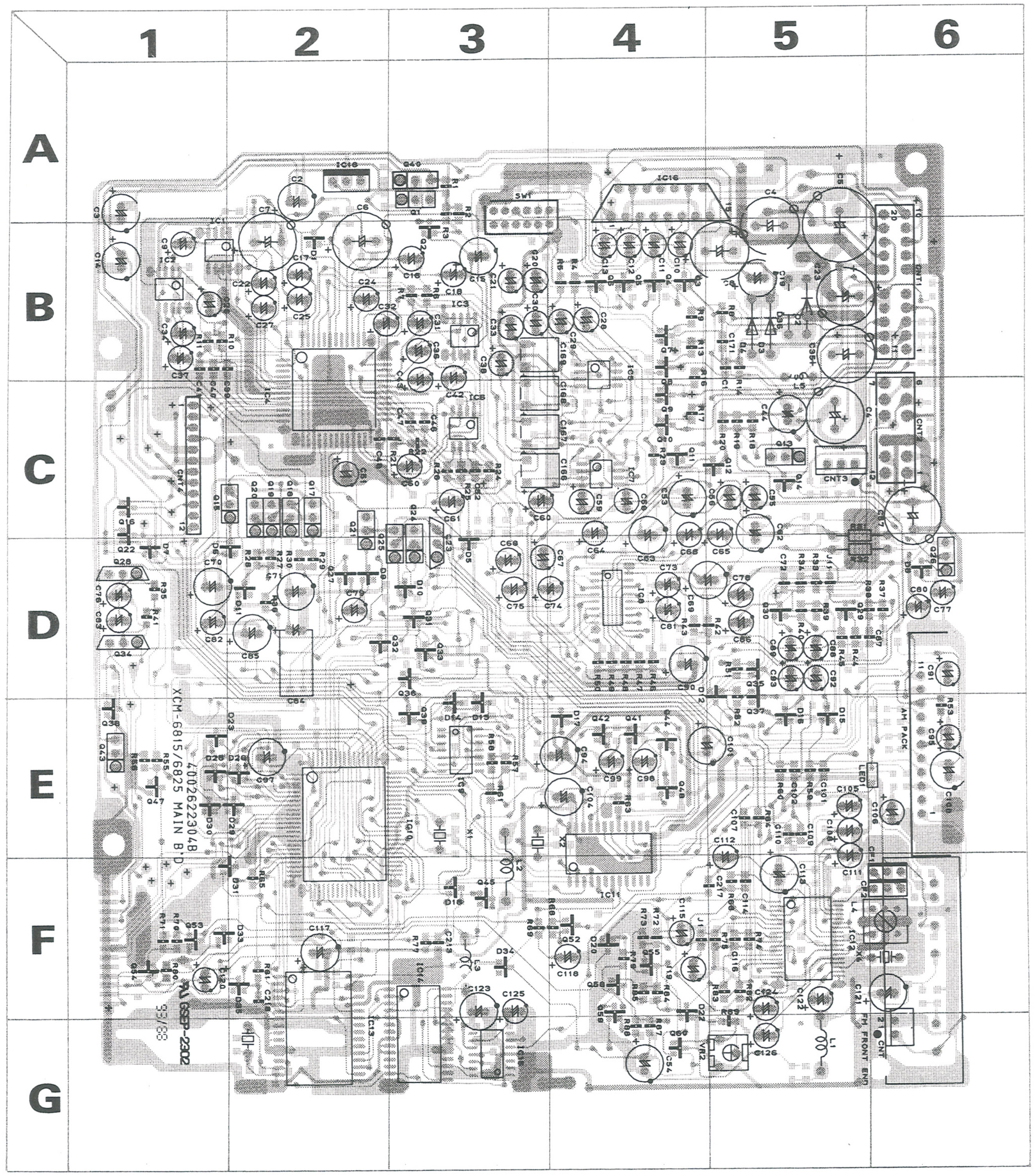
Ref. No.	Part No.	Description	Q'TY
	4471000350	Accessory Power Connector Ass'y 20P	
	6512001810	Sleeve	
	6505089410	Key Sleeve	
	6505035010	Back Strap	
	6065101110	RCA Cold Cap	
	8009150064	Screw, BM 5×6N	
	8099150161	Screw, HEX MSP/W 5×16Y	
	8159150203	Screw, #1WPTC 5×20B	
	8029550011	Nut Flangetoothed, M5	

Note : RESISTOR/CAPACITOR TOLERANCE ;
D : ±0.5%, J : ±5%, K : ±10%, M : ±20%, Z : +80%, −20%

Top & Bottom View of P.C. Boards

MAIN P.C. BOARD 4002622304

—TOP VIEW—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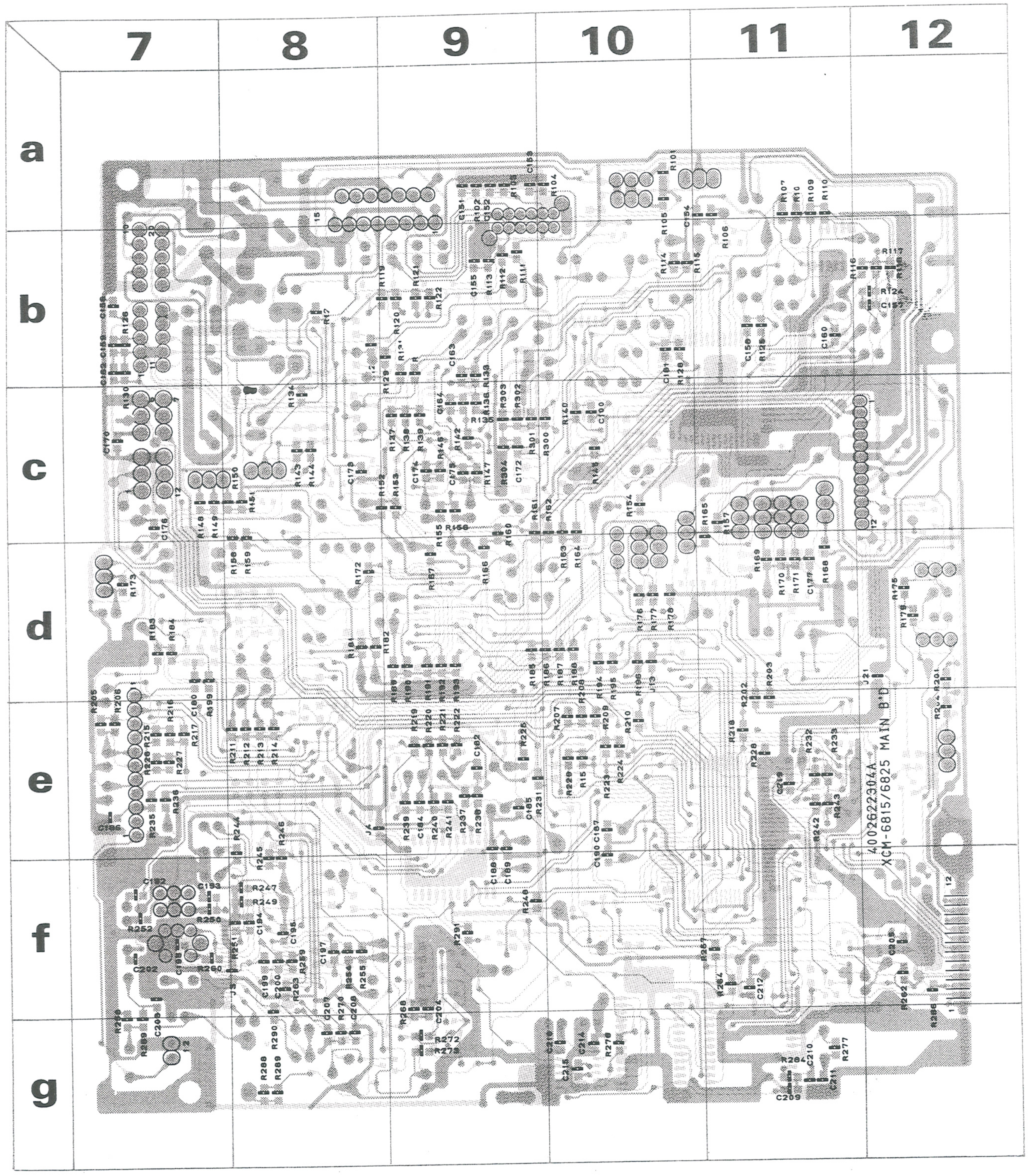
XCM-6815/6825 MAIN B'D
4002622304B

—BOTTOM VIEW—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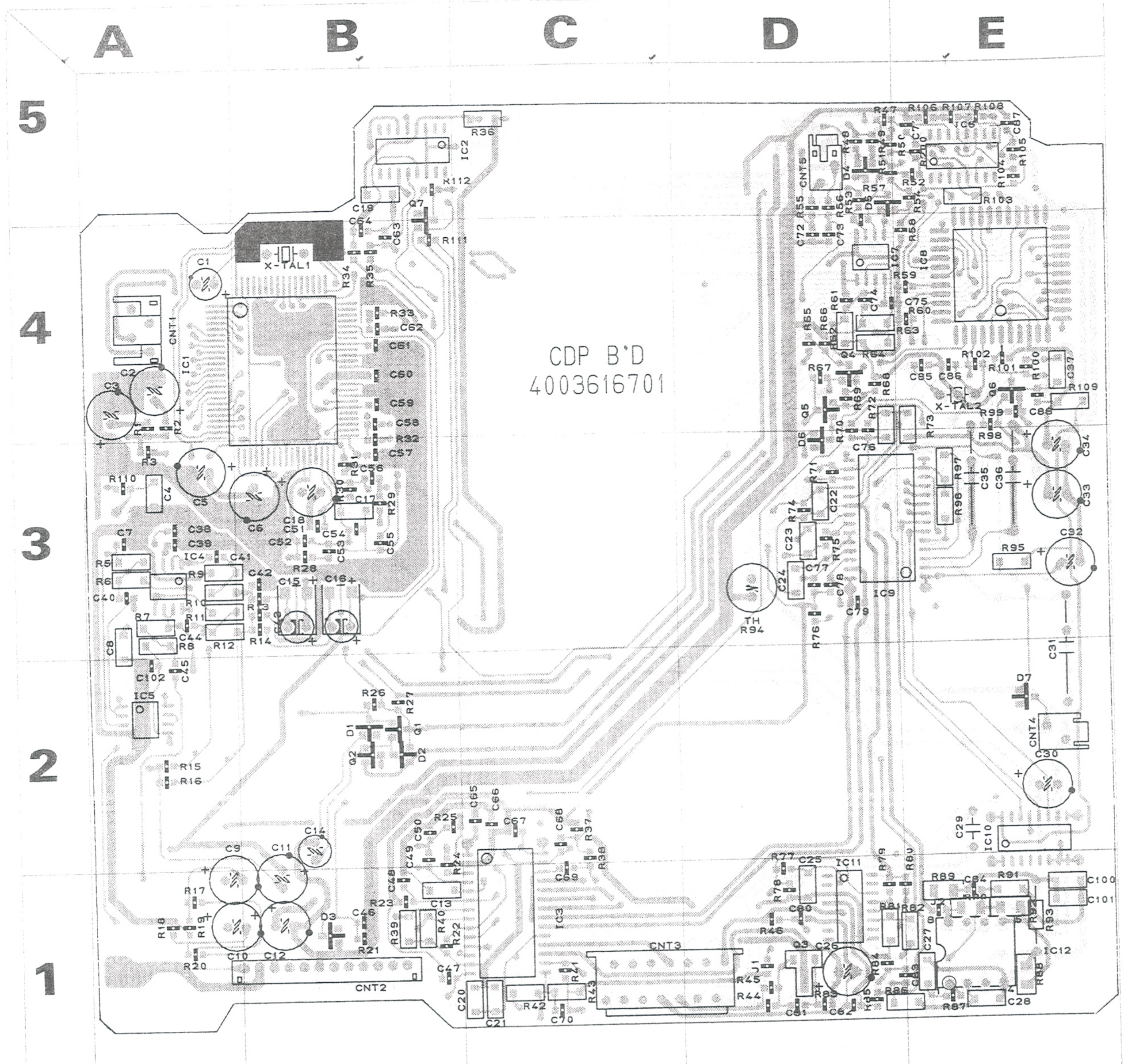
4002622304A
XCM-6815/6825 MAIN B'D

—TOP VIEW—


A
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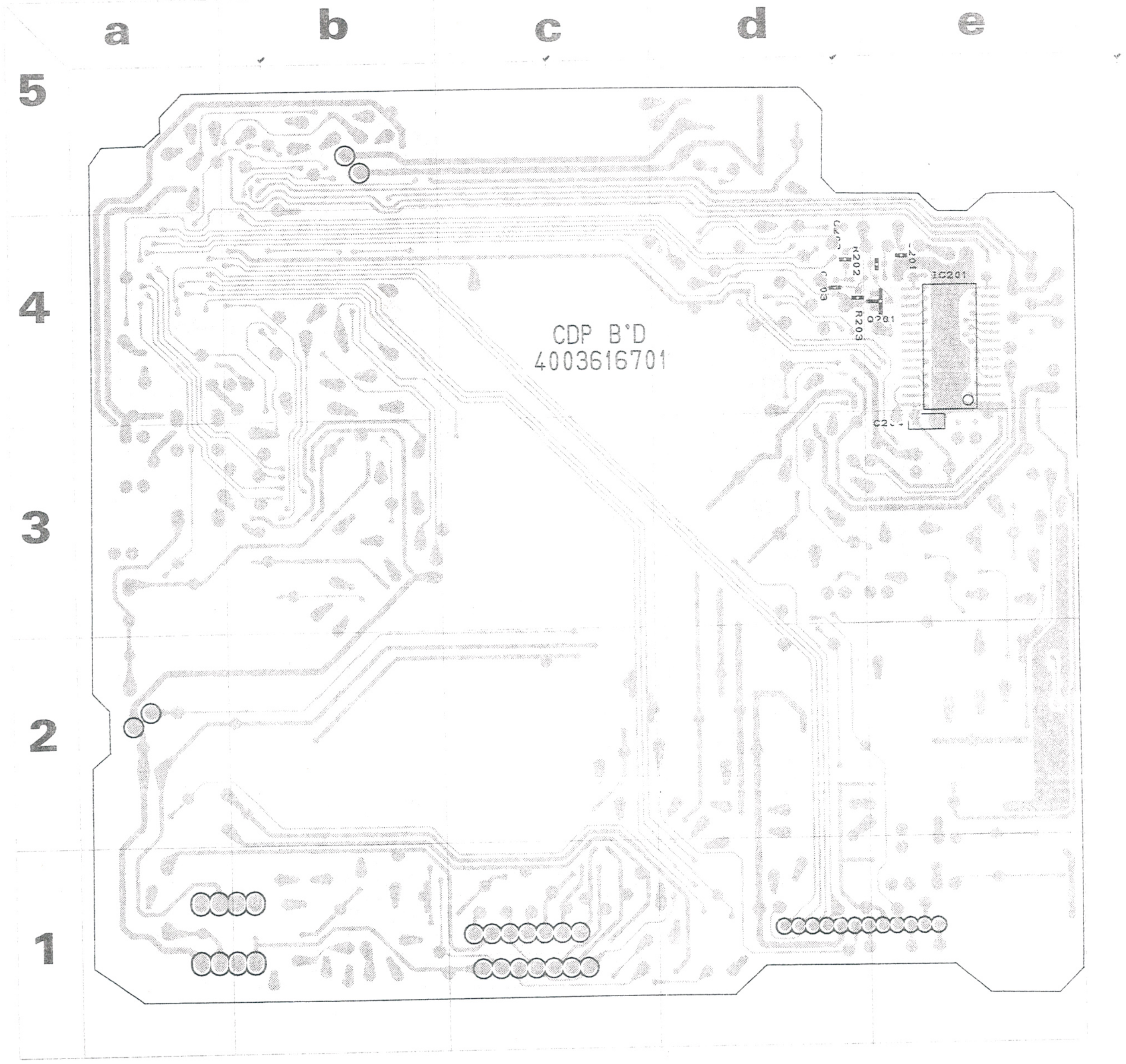
CDP B'D
4003616701

—BOTTOM VIEW—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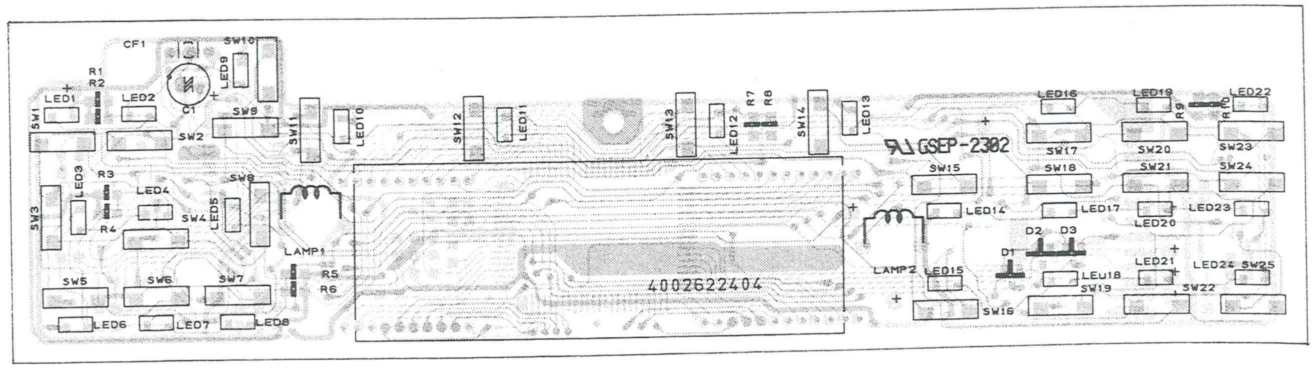
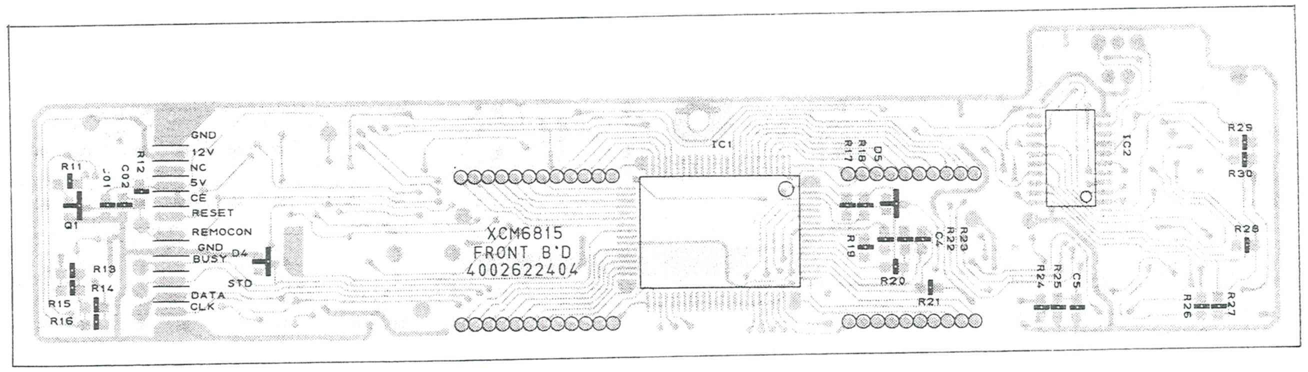
CDP B'D
4003616701

FRONT P.C. BOARD 4002622404

—TOP VIEW—


GSEP-2302
4002622404

—BOTTOM VIEW—


GND
12V
NC
5V
CE
RESET
REMOCON
GND
BUSY
STD
DATA
CLK
XCM6815
FRONT B'D
4002622404

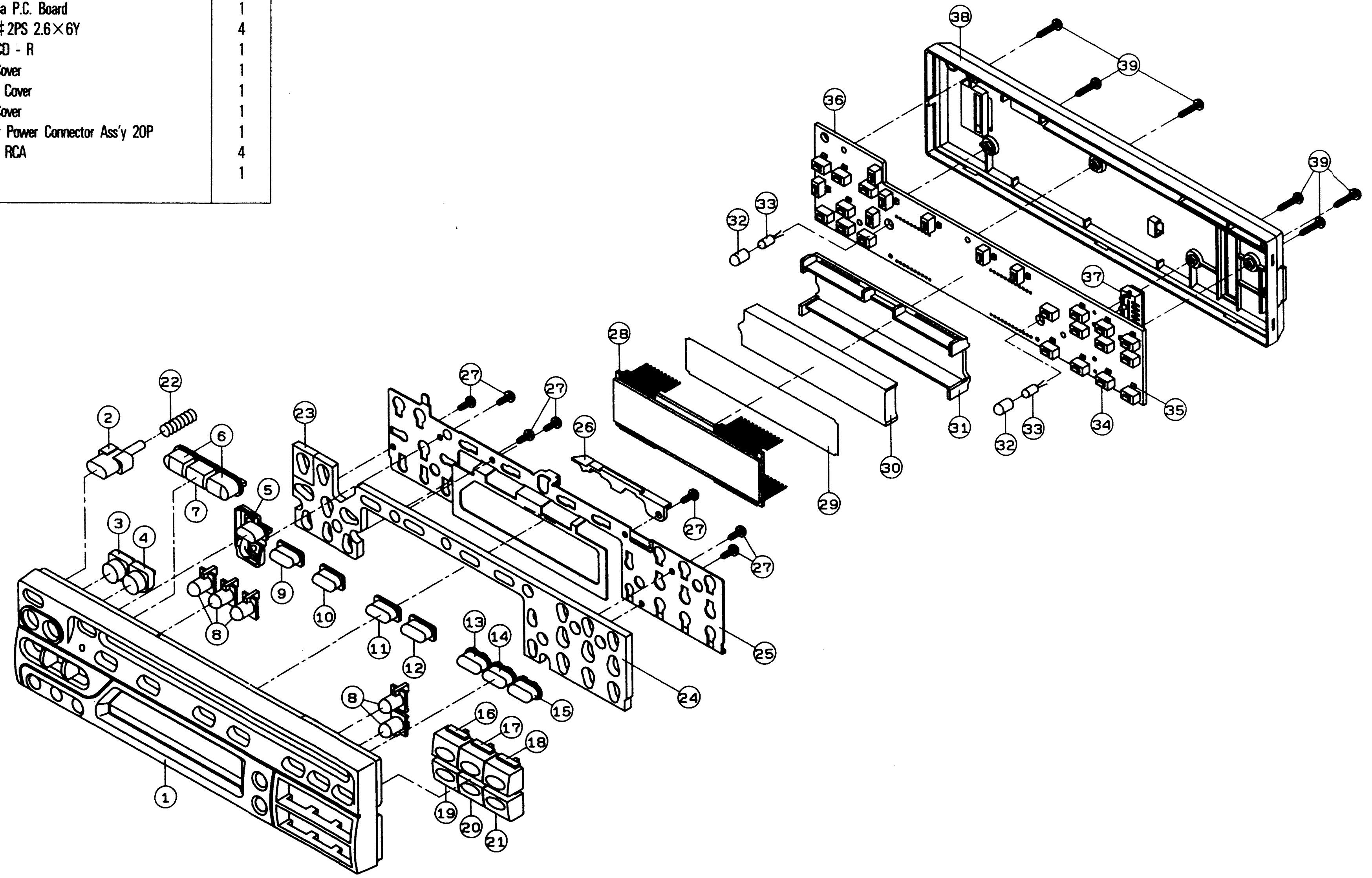
Exploded View

1. Part Lists

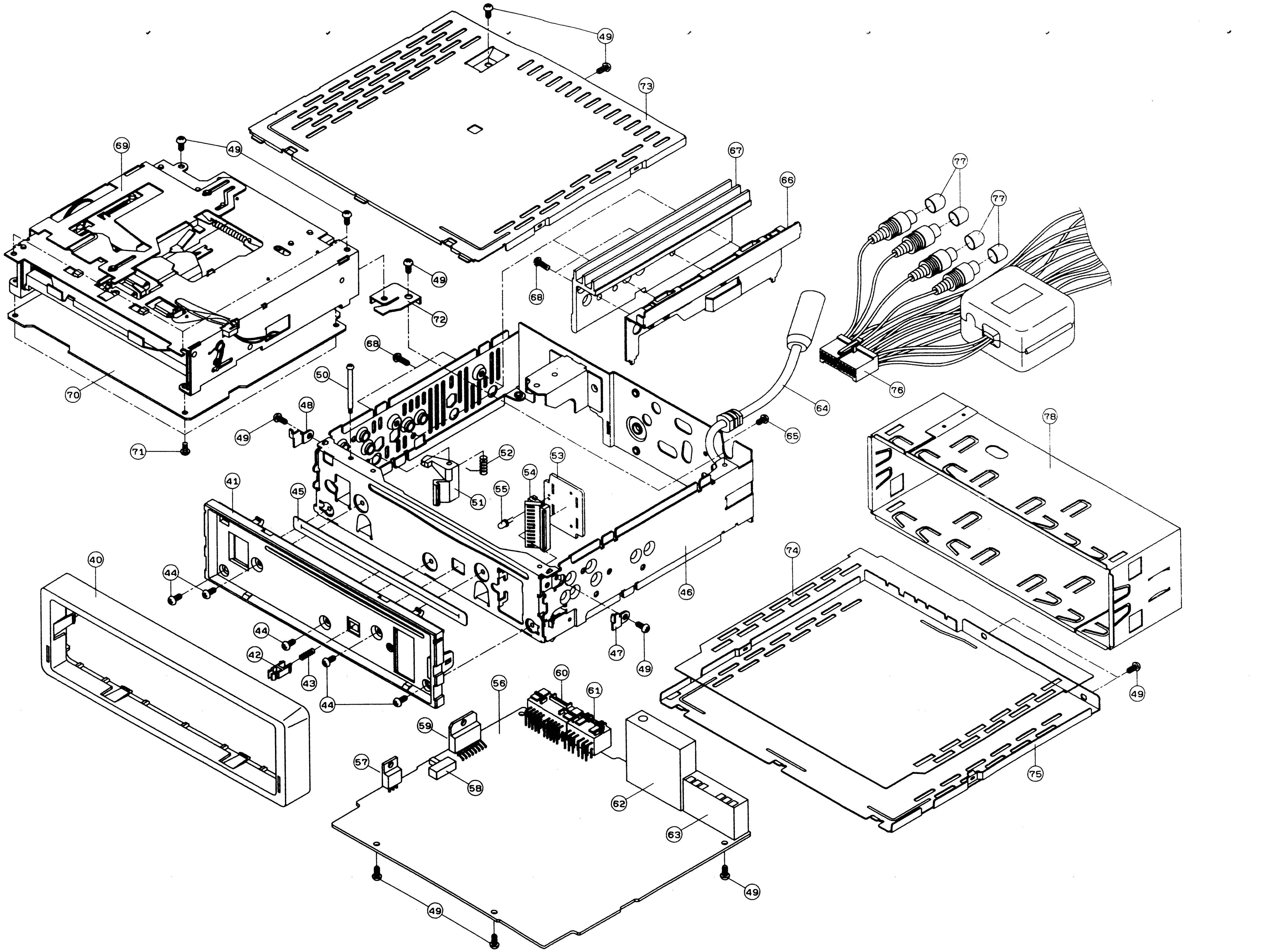
Ref. No.	Part No.	Description	Q'TY
Ass'y, Detachable Panel			
1	048502008713	Detachable Panel	1
2	048545120011	Button - Detachable	1
3	048545114111	Button - OFF	1
4	048545114114	Button - LD / MUT	1
5	048553017611	Button - Eject CD	1
6	048545113911	Button - SEL UP / DOWN	2
7	048545113811	Button - SEL	1
8	048545114211	Button - DOT (RDS/REG,TA,PTY,AS/PS,ST/MO)	5
9	048545113614	Button - SEEK DOWN	1
10	048545113613	Button - SEEK UP	1
11	048545113612	Button - MEN	1
12	048545113611	Button - DSP	1
13	048545114011	Button - BAND	1
14	048545114013	Button - CDC	1
15	048545114014	Button - PLAY/PAUSE	1
16	048545114312	Button - M1	1
17	048545114313	Button - M2 / RPT	1
18	048545114315	Button - M3 / INT	1
19	048545114316	Button - M4 / RNP	1
20	048545114317	Button - M5 / CLEAR	1
21	048545114318	Button - M6	1
22	6555013110	Spring Detachable	1
23	6705021610	Sponge - B	1
24	6703002610	Sponge - A	1
25	6123623710	Front Frame	1
26	8545113510	Reflector CD	1
27	8019220051	Screw, ♯2BT 5×5Y	7
28	2338319911	LCD, HL-6815	1
29	8535039610	Filter LCD	1
30	048553017811	Reflector LCD	1
31	8553017710	Housing LCD	1
32	8728000180	Lamp, Color Cap, 910G-20, Orange	2
33	2528201810	Lamp, 14V / 60mA, ϕ3 PCB Type	2
34	4658110001	Tact Switch, Chip, EVQ-PJQ04M	25
35	2309100601	LED Chip, LN1871Y5, Orange	24
36	4002622304	Front P.C. Board	1
37	4448400780	Connector Plug 12P, FPP-12-1.4-G.G	1
38	048502008811	Panel Cover	1
39	8119120103	Screw, ♯1PT 2×10B	6
• Individual Parts			
40	048502009011	Decoration Panel	1
41	048502008911	Guide Panel	1
42	8555046910	Locker Eject	1
43	6555608510	Spring Locker	1
44	8009130063	Screw, BM 3×6B	5
45	6735011110	Felt CD	1
46	056121611530	Ass'y Chassis Main	1
47	6505131010	Bracket Side - R	1
48	6505131020	Bracket Side - L	1
49	8009130051	Screw, BM 3×5Y	15
50	8095004110	Screw, Pivot	1
51	8553017910	Hook Detachable	1
52	6555013110	Spring Detachable	1
53	4003616504	Detachable P.C. Board	1
54	4448400770	Connector Socket 12P, FPS-12-1.1-G.G	1
55	2308220118	LED, SLR34UR3, Red	1
56	4002622304	Main P.C. Board	1
57	2168601101	Regulator IC GD7805	1

Ref. No.	Part No.	Description	Q'TY
58	4618005810	Switch Slide, SLSS74KJSS4208A	1
59	2168003111	Power IC TDA7370	1
60	4448400720	Power Connector Socket 20P	1
61	4448400710	Connector Socket 12P, CDC Control	1
62	3928001020	MW/LW Tuner Pack, KEA647G-S	1
63(OLD)	3928101060	FM Front-End, FE322-A02	1
63(NEW)	3928801991	FM Front-End, FE323-A13	1
64	4353002022	Antenna Receptacle Ass'y 2P	1
65	8119430059	Screw, SAM 3×5SN	1
66	6503027210	Bracket IC	1
67	7503201610	Heat Sink	1
68	8009130081	Screw, BM 3×8Y	4
69	5738002010	CD Mechanism Ass'y, CDM-9	1
70	4003616700	CD Mecha P.C. Board	1
71	8119926061	Screw, ♯2PS 2.6×6Y	4
72	6505131110	Bracket CD - R	1
73	6122027410	Chassis Cover	1
74	6065105110	Insulation Cover	1
75	6122419410	Bottom Cover	1
76	4471000340	Accessory Power Connector Ass'y 20P	1
77	6065101110	Cap Cord RCA	4
78	6512001811	Sleeve	1

2. Detachable Front Panel Assembly



3. Cabinet and Chassis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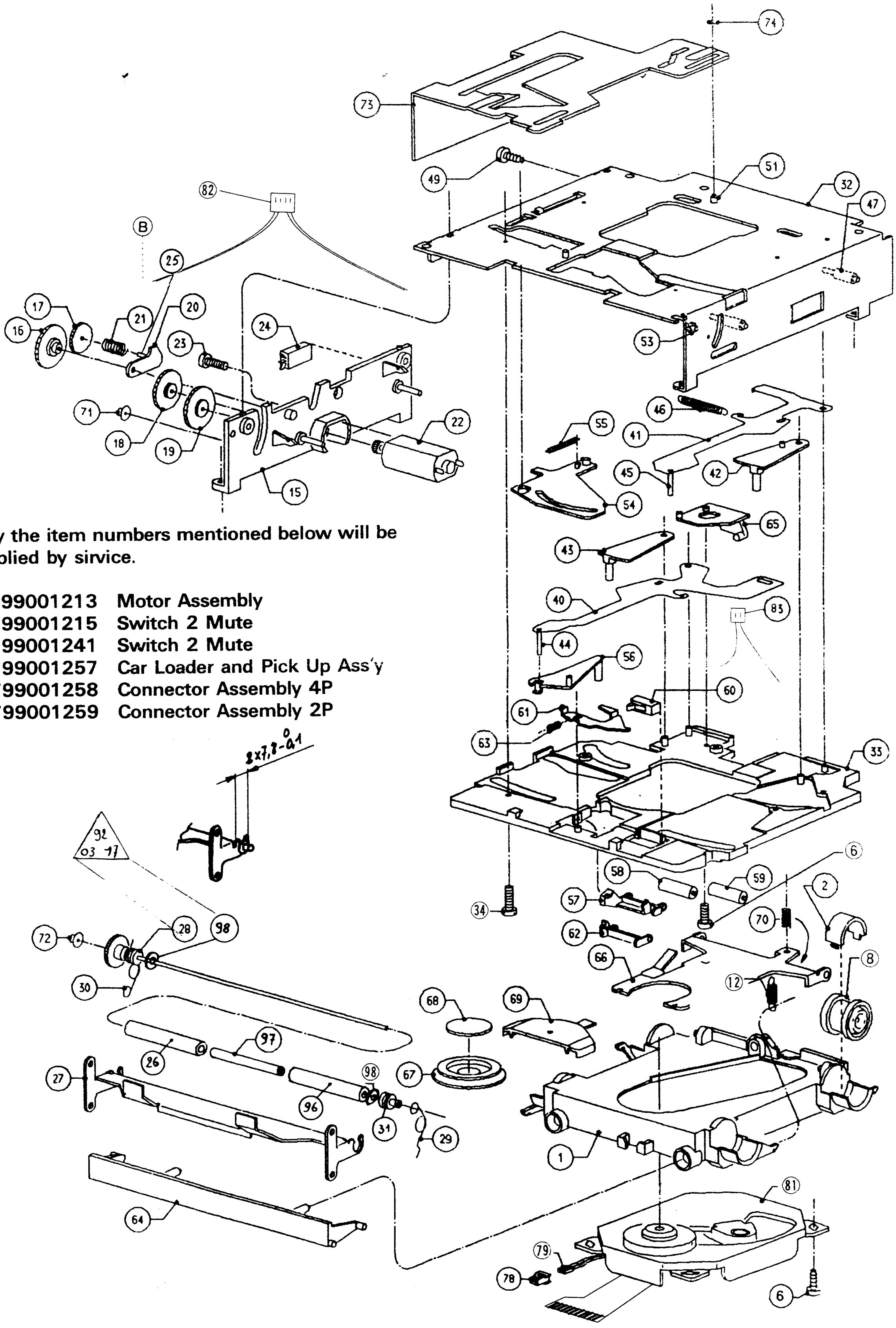
Exploded View & Part List of CDP Mechanism

Ref. No.	Part No.	Description	Mfr.s Part No.	Q'TY
1	5799001201	Mounting Plate		1
2	5799001202	Grommrt Cover		4
3~5		Not used		
6	5799001203	Plastic TORX SCR ST 2×4		4
7		Not used		
8	5799001204	Shock Absorber		4
9~11		Not used		
12	5799001205	Suspension Spring		3
13,14		Not used		
15	5799001206	Motor Plate Assembly		1
16	5799001207	Idle Gear		1
17	5799001208	Swing Gear		1
18	5799001209	Pinion Gear		1
19	5799001210	Drive Gear		1
20	5799001211	Swing Bracket		1
21	5799001212	Friction Spring		1
22	5799001213	Motor Assembly	3104-148-0003	1
23	5799001214	Metr Torx SCR ST ZN M 2×4		1
24	5799001215	Switch 2 Mute	3112-338-4038	1
25	5799001216	Swing Spindle		1
26	5799001217	Roller		1
27	5799001218	Roller Bracket		1
28	5799001219	Roller Spindle Assembly		1
29	5799001220	Roller Spring Right		1
30	5799001221	Roller Spring Left		1
31	5799001222	Roller Bearing Right		1
32	5799001223	Chassis		1
33	5799001224	Screening Plate		1
34	5799001225	PAN TAP SCR ST ZN BLK 2.0×4		6
35~39		Not used		
40	5799001226	Centring Bracket Left		1
41	5799001227	Centring Bracket Right		1
42	5799001228	Stop Bracket Right		1
43	5799001229	Stop Bracket Left		1
44	5799001230	Centring Pin		2
45		Not used		
46	5799001231	Centring Spring		1
47	5799001232	Suspension Pin Right		2
48		Not used		

Ref. No.	Part No.	Description	Mfr.s Part No.	Q'TY
49	5799001233	Plastic TORX SCR ST ZN 3×8		2
50		Not used		
51	5799001234	Guide Pin		2
52		Not used		
53	5799001235	Pivot		1
54	5799001236	Sliding Bracket		1
55	5799001237	Detection Spring		1
56	5799001238	Detection Brackrt		1
57	5799001239	Switch Bracket Back		1
58	5799001240	Switch Roller		2
59		Not used		
60	5799001241	Switch 2 Mute	3112-338-4038	1
61	5799001242	Lever Switch		1
62	5799001243	Switch Bracket Front		1
63	5799001244	Switch Spring		1
64	5799001245	Locking Bracket		1
65	5799001246	Locking PAL		1
66	5799001247	Pressure Plate		1
67	5799001248	Pressure DISC		1
68	5799001249	Closing Plate		1
69	5799001250	Pivot Cover		1
70	5799001251	Pressure Spring		1
71	5799001252	Guide Roller		2
72		Not used		
73	5799001253	Control Bracket		1
74,75	5799001254	Retain Ring ST BLK		2
76		Not used		
77	5799001255	PAN TAP SCR ST ZN BLK		1
78,79		Not used		
80	5799001256	Connector Ass'y 2P		1
81	5799001257	Car Loader and Pick Up Ass'y	3104-108-7683	1
82	5799001258	Connector Assembly 4P	3104-107-24812	1
83	5799001259	Connector Assembly 2P	3104-107-24803	1
84~94		Not Used		
95	5799001264	Suspension Spring		1
96	5799001265	Roller		1
97	5799001266	Bush		1
98	5799001267	Ring		2


74
73
49
51
32
47
82
B
25
17
21
20
16
24
23
53
71
18
19
22
15
46
55
41
45
42
54
65
43
40
83
44
56
60
61
63
33
2x7,7-0,1
92
03 17
58
59
6
57
2
34
62
70
8
66
12
72
28
98
30
68
69
97
26
27
98
67
96
31
29
1
64
81
79
78
6

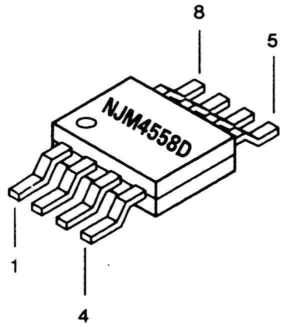
Note : Only the item numbers mentioned below will be supplied by sirvice.

22	5799001213	Motor Assembly
24	5799001215	Switch 2 Mute
60	5799001241	Switch 2 Mute
81	5799001257	Car Loader and Pick Up Ass'y
82	5799001258	Connector Assembly 4P
83	5799001259	Connector Assembly 2P

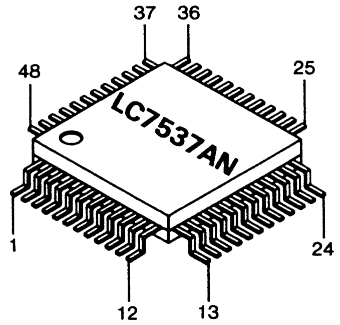
Semiconductor Lead Identifications

1. Main Section

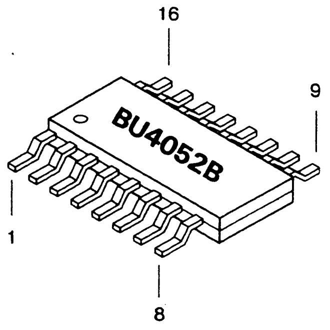
NJM4558D/IC1,IC2,
IC3,IC5,
IC6,IC7


8
5
NJM4558D
1
4

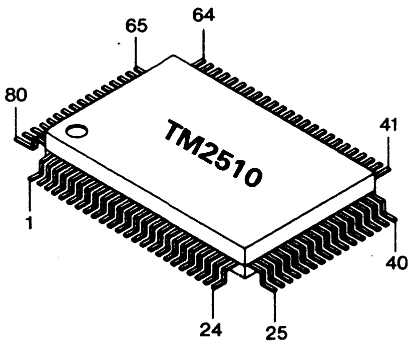
LC7537AN/IC4


37
36
48
25
LC7537AN
1
24
12
13

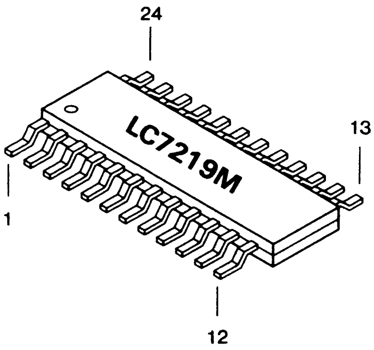
BU4052B/IC8


16
9
BU4052B
1
8

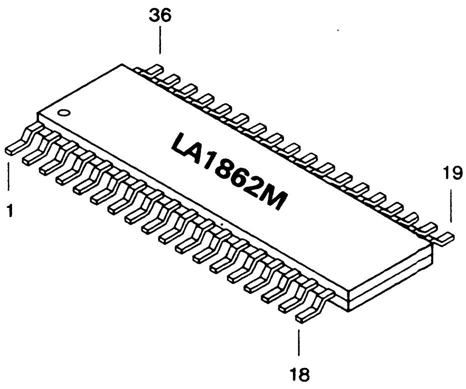
TM2510/IC10


65
64
80
41
TM2510
1
40
24
25

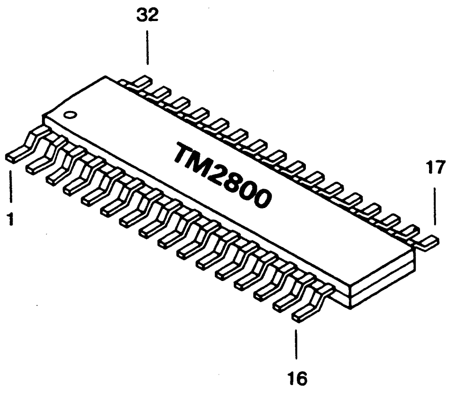
LC7219M/IC11


24
13
LC7219M
1
12

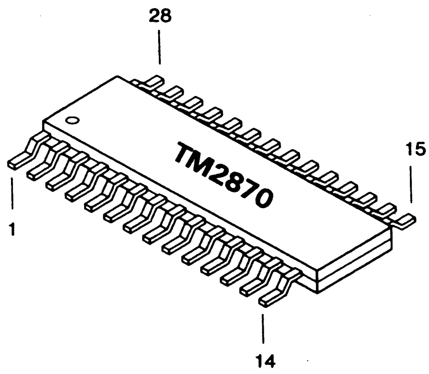
LA1862/IC12


36
19
LA1862M
1
18

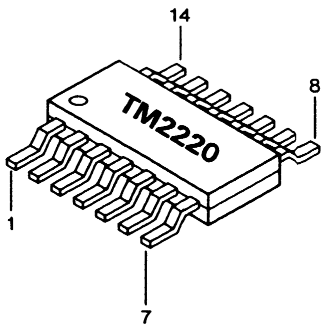
TM2800/IC13


32
17
TM2800
1
16

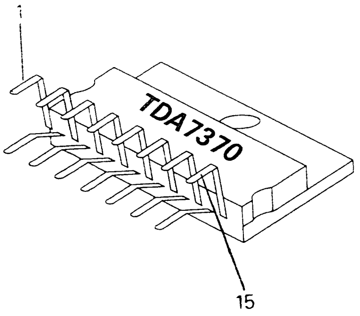
TM2870/IC14


28
15
TM2870
1
14

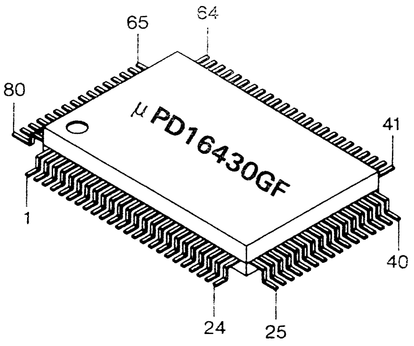
TM2220/IC15


14
8
TM2220
1
7

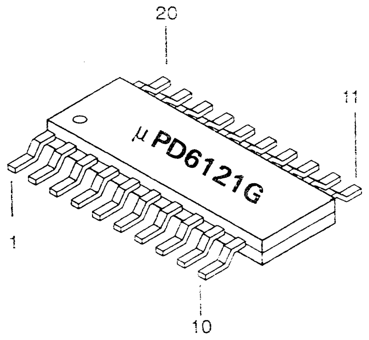
TDA7370/IC16


1
TDA7370
15

µPD16430GF/IC1

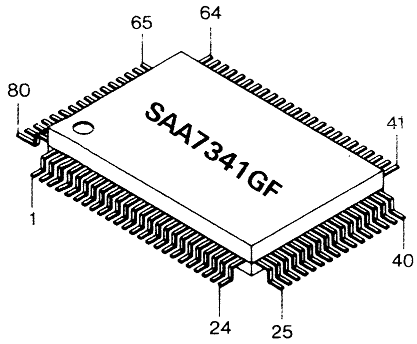

65
64
80
µPD16430GF
41
1
40
24
25

µPD6121G/IC2

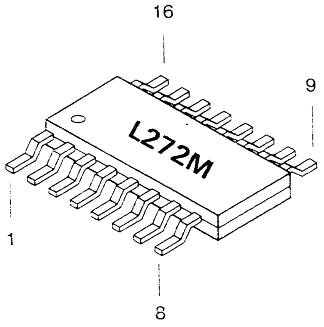

20
11
µPD6121G
1
10

2. CDP Section

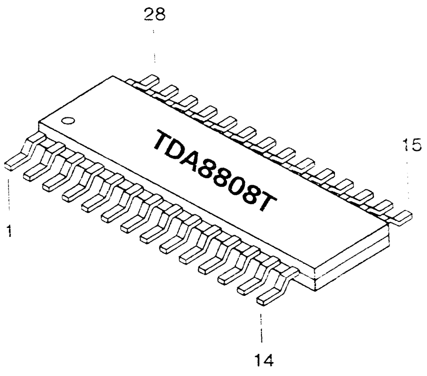
SAA7341GF/IC1


65
64
80
SAA7341GF
41
1
40
24
25

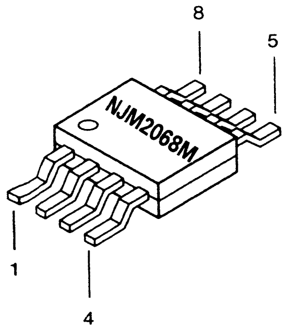
L272M/IC2,IC6, IC11


16
9
L272M
1
8

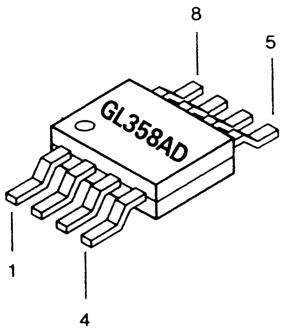
TDA8808T/IC3


28
15
TDA8808T
1
14

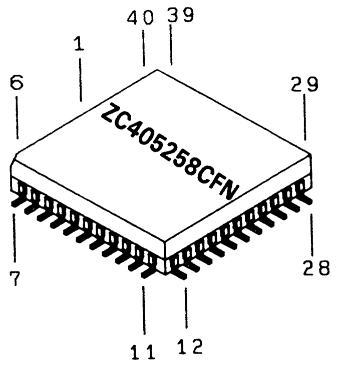
NJM2068M/IC4, IC5


8
5
NJM2068M
1
4

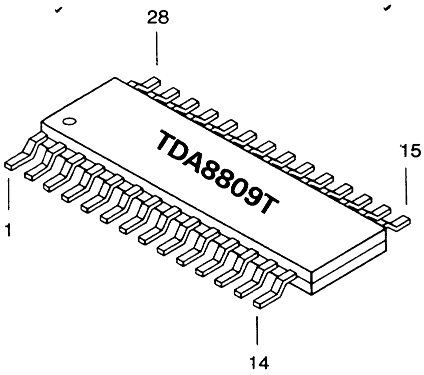
GL358AD/IC7


8
5
GL358AD
1
4

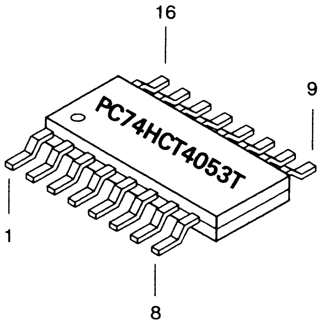
ZC405258CFN/IC8


40
39
1
6
29
ZC405258CFN
7
28
11
12

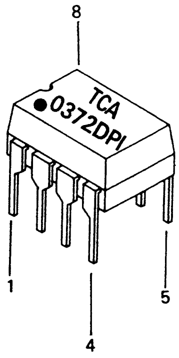
TDA8809T/IC9


28
TDA8809T
15
1
14

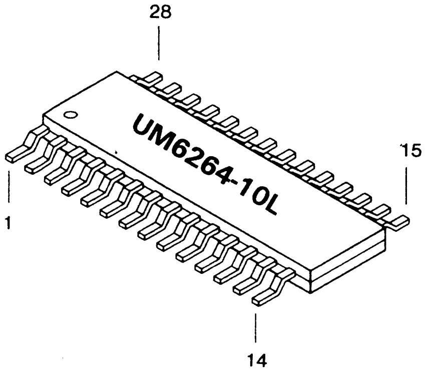
PC74HCT4053T/IC10


16
9
PC74HCT4053T
1
8

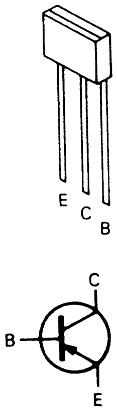
TCA0372DPI/IC12


8
TCA
0372DPI
1
5
4

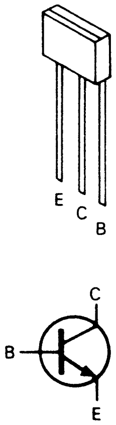
UM6264-10L/IC201


28
UM6264-10L
15
1
14

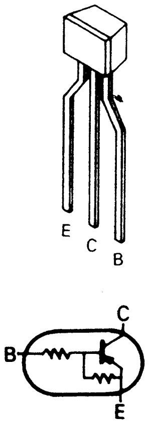
2SB1237TV/Q1,Q13,
Q17,Q24
Q25,Q40
Q17,Q24



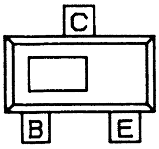
2SD1858/Q15,Q18,
Q19,Q20,
Q21

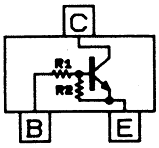


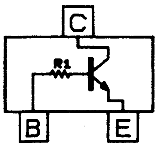
KSR2205/Q23

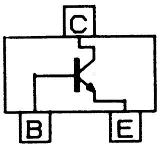


∗ ∗CHIP TRANSISTORS









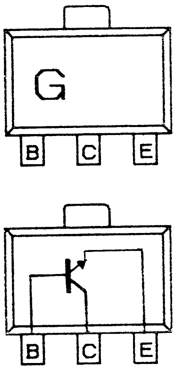
NPN

Description	Mark	R1	R2
KRC104S	ND	47K	47K
KRC111S	NM	10K	–
KTC3875	AL	–	–
KTD1304	MAX	–	–

KTC3875/Q28,Q29,Q30,
Q34,Q41,Q42,
Q47,Q48,Q53,
Q54,Q55,Q58,
Q60

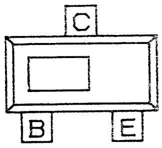
KRC111S/Q45
KTD1304/Q3~Q10,
Q35,Q37

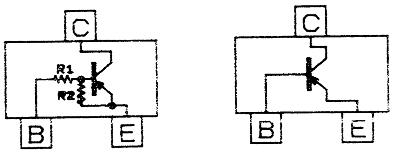
KTC4375/Q3



PNP

Description	Mark	R1	R2
KRA106S	PF	4.7K	47K
KTA1504	AS	–	–

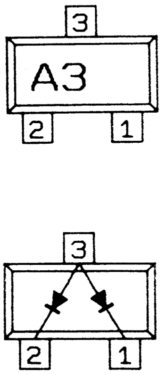



C
R1
R2
B
E
C
B
E

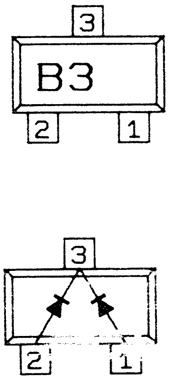
KRA106S/Q11,Q16,
Q22,Q32

KTA1504/Q36,Q52,
Q59

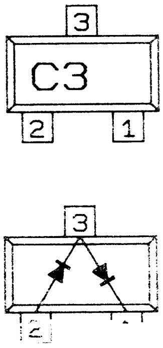
**** CHIP DIODES**
KDS181/D12,D26



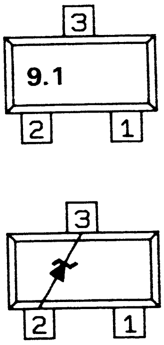
**KDS184/D5,D7,D10,D15,D16,D18,
D23,D28,D29,D30,D33,D34**



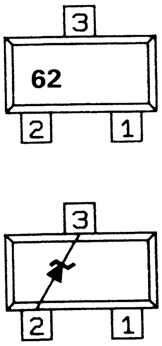
KDS226/D22,DD31



Z02W-9.1V/D1



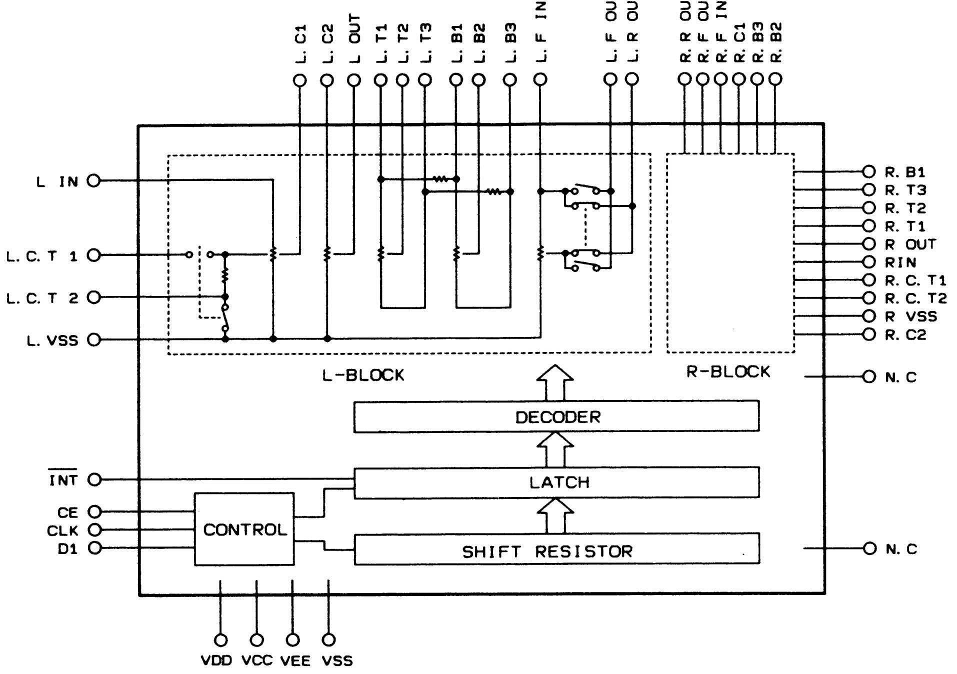
Z02W-6.2V/D3



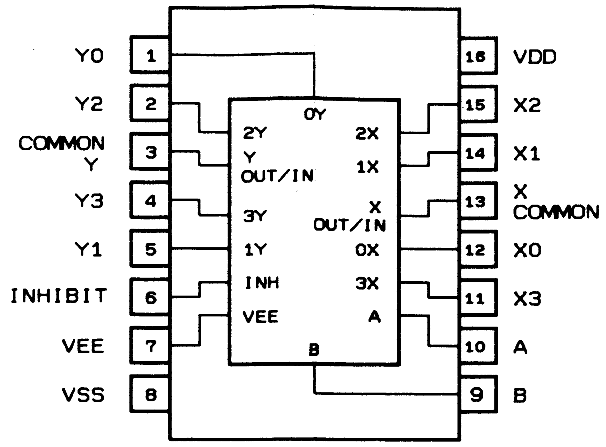
IC Internal Diagram

1. Main Section

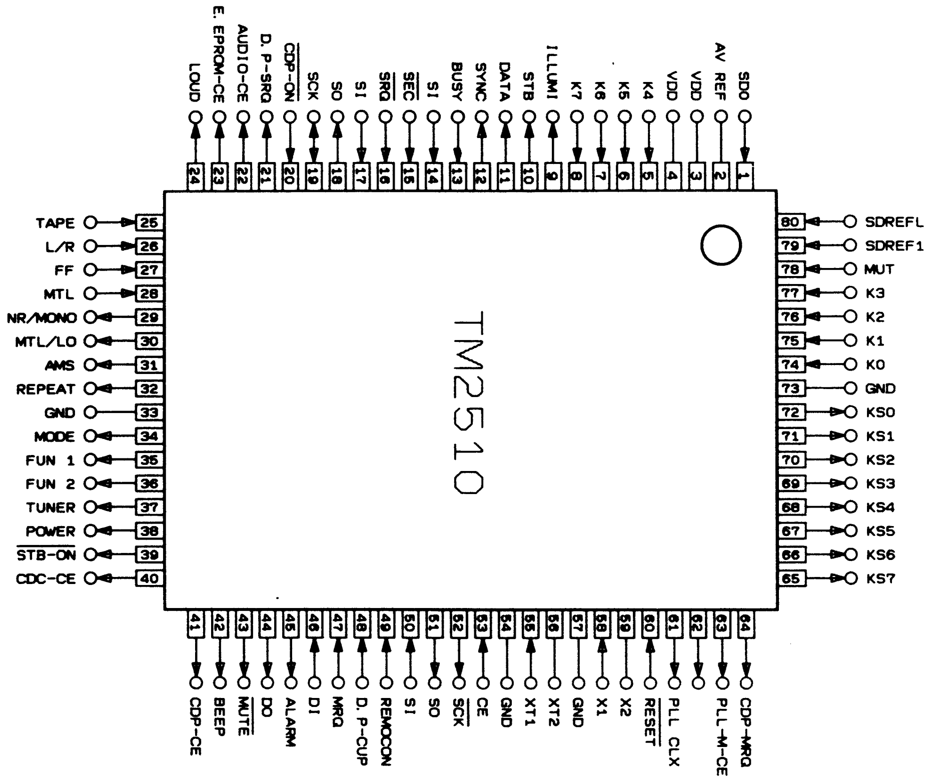
LC7537AN (Electric Volume Control/IC4)


L. C1
L. C2
L OUT
L. T1
L. T2
L. T3
L. B1
L. B2
L. B3
L. F IN
L. F OUT
L. R OUT
R. R OUT
R. F OUT
R. F IN
R. C1
R. B3
R. B2
L IN
L. C. T 1
L. C. T 2
L. VSS
R. B1
R. T3
R. T2
R. T1
R OUT
RIN
R. C. T1
R. C. T2
R VSS
R. C2
N. C
L-BLOCK
R-BLOCK
DECODER
LATCH
CONTROL
SHIFT RESISTOR
INT
CE
CLK
D1
N. C
VDD VCC VEE VSS

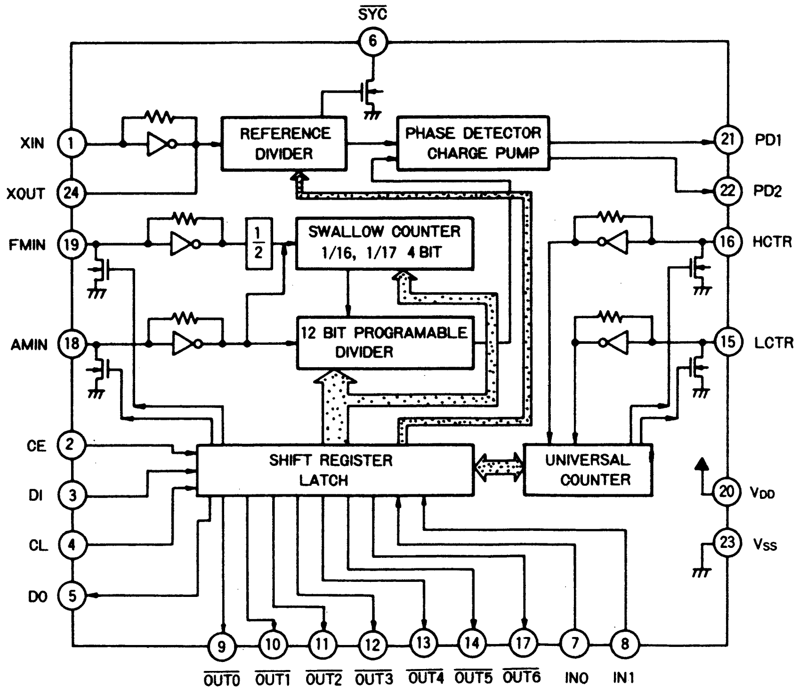
BU4052B (4-CH Analog Multiplexer/IC8)


Y0
Y2
COMMON Y
Y3
Y1
INHIBIT
VEE
VSS
1
2
3
4
5
6
7
8
16
15
14
13
12
11
10
9
VDD
X2
X1
X COMMON
X0
X3
A
B
0Y
2Y
2X
Y OUT/IN
1X
3Y
X OUT/IN
1Y
0X
INH
3X
VEE
A
B

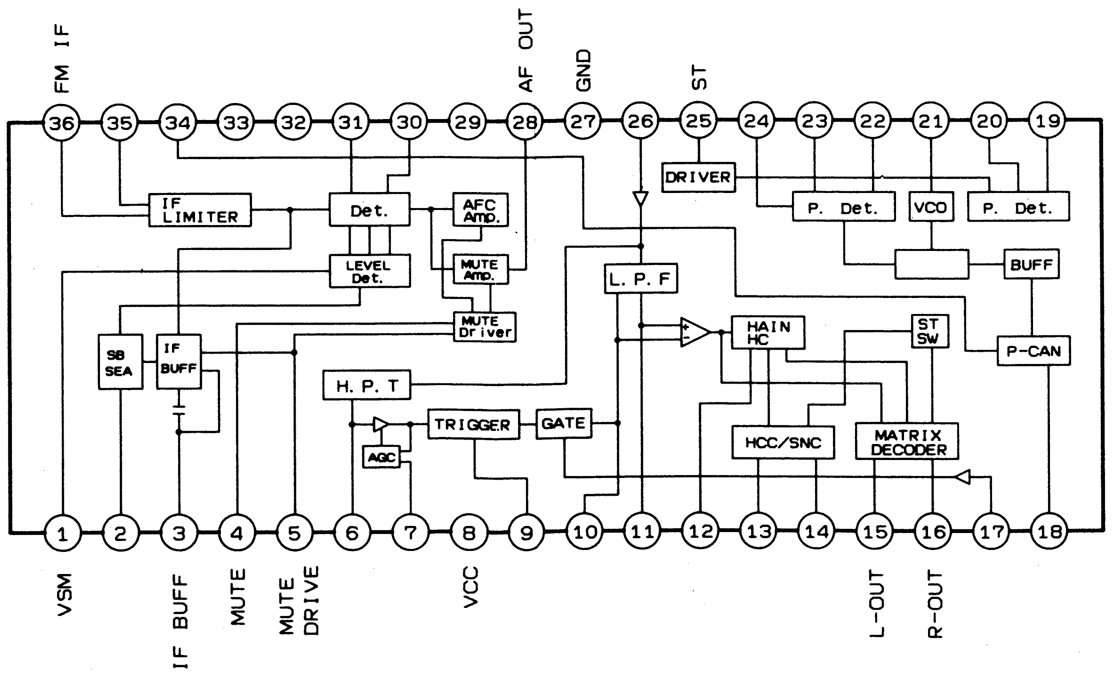
TM2510 (DTS μ-COM/IC10)


TM2510
1 SDO
2 AV REF
3 VDD
4 VDD
5 K4
6 K5
7 K6
8 K7
9 ILLUMI
10 STB
11 DATA
12 SYNC
13 BUSY
14 SI
15 SEC
16 SRQ
17 SI
18 SO
19 SCK
20 CDP-ON
21 D. P-SRQ
22 AUDIO-CE
23 E. EPROM-CE
24 LOUD
25 TAPE
26 L/R
27 FF
28 MTL
29 NR/MONO
30 MTL/LO
31 AMS
32 REPEAT
33 GND
34 MODE
35 FUN 1
36 FUN 2
37 TUNER
38 POWER
39 STB-ON
40 CDC-CE
41 CDP-CE
42 BEEP
43 MUTE
44 DO
45 ALARM
46 DI
47 MRQ
48 D. P-CUP
49 REMOCON
50 SI
51 SO
52 SCK
53 CE
54 GND
55 XT1
56 XT2
57 GND
58 X1
59 X2
60 RESET
61 PLL CLX
62
63 PLL-M-CE
64 CDP-MRQ
65 KS7
66 KS6
67 KS5
68 KS4
69 KS3
70 KS2
71 KS1
72 KS0
73 GND
74 K0
75 K1
76 K2
77 K3
78 MUT
79 SDREF1
80 SDREFL

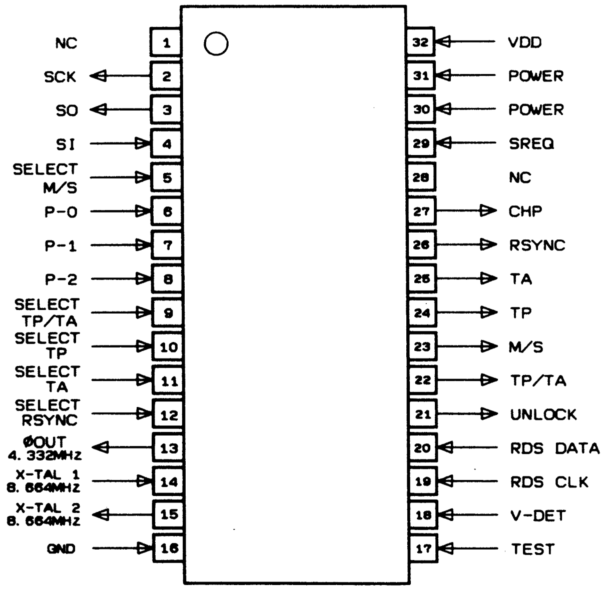
LC7219 (PLL IC/IC11)


SYC
6
XIN 1
XOUT 24
FMIN 19
AMIN 18
CE 2
DI 3
CL 4
DO 5
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
1/2
SWALLOW COUNTER 1/16, 1/17 4 BIT
12 BIT PROGRAMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
21 PD1
22 PD2
16 HCTR
15 LCTR
20 VDD
23 VSS
9 OUT0
10 OUT1
11 OUT2
12 OUT3
13 OUT4
14 OUT5
17 OUT6
7 IN0
8 IN1

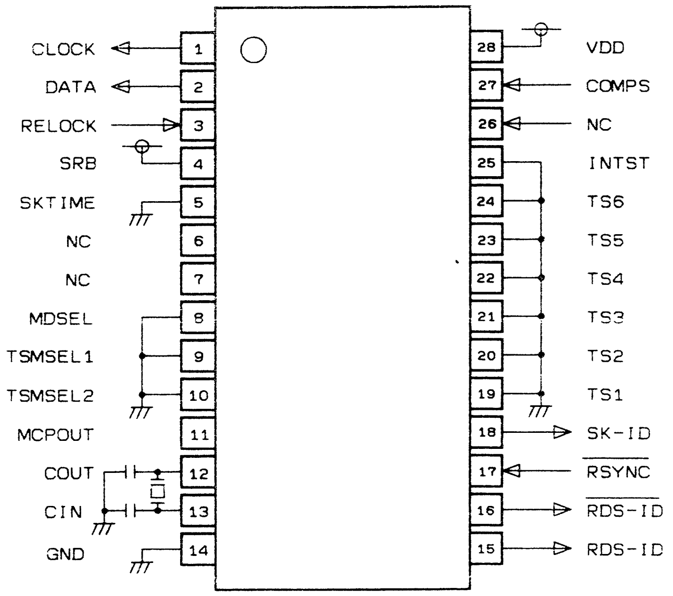
LA1862M (FM IF Amp./Detector/IC12)


FM IF
AF OUT
GND
ST
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
21
20
19
IF LIMITER
Det.
AFC Amp.
LEVEL Det.
MUTE Amp.
MUTE Driver
DRIVER
P. Det.
VCO
P. Det.
BUFF
L. P. F
HAIN HC
ST SW
P-CAN
SB SEA
IF BUFF
H. P. T
TRIGGER
GATE
AGC
HCC/SNC
MATRIX DECODER
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
VSM
IF BUFF
MUTE
MUTE DRIVE
VCC
L-OUT
R-OUT

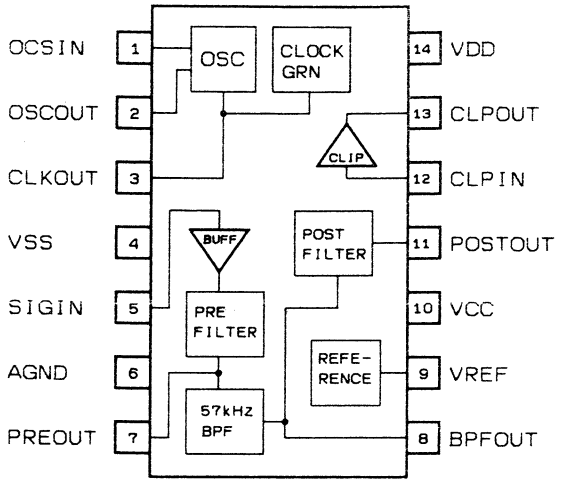
TM2800 (RDS Data Processing/IC13)


1 NC
2 SCK
3 SO
4 SI
5 SELECT M/S
6 P-0
7 P-1
8 P-2
9 SELECT TP/TA
10 SELECT TP
11 SELECT TA
12 SELECT RSYNC
13 ØOUT 4. 332MHz
14 X-TAL 1 8. 664MHz
15 X-TAL 2 8. 664MHz
16 GND
32 VDD
31 POWER
30 POWER
29 SREQ
28 NC
27 CHP
26 RSYNC
25 TA
24 TP
23 M/S
22 TP/TA
21 UNLOCK
20 RDS DATA
19 RDS CLK
18 V-DET
17 TEST

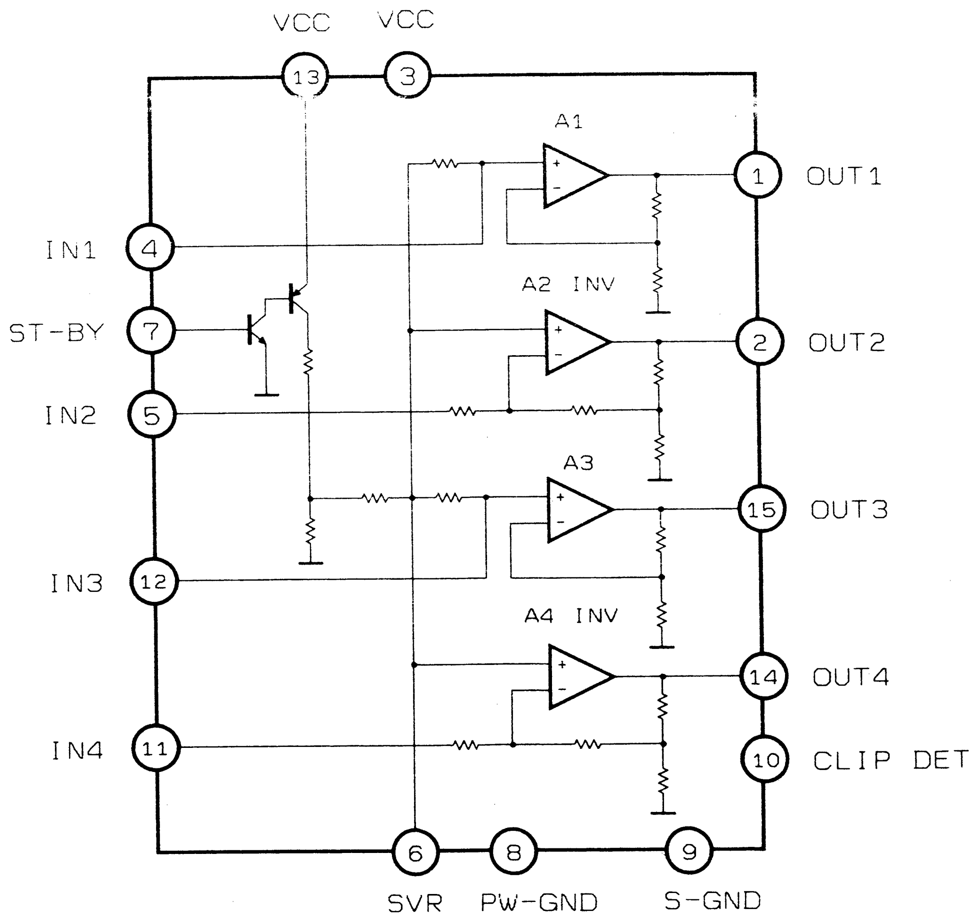
TM2870 (RDS Demodulator/IC14)


CLOCK
DATA
RELOCK
SRB
SKTIME
NC
NC
MDSEL
TSMSEL1
TSMSEL2
MCPOUT
COUT
CIN
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
28
27
26
25
24
23
22
21
20
19
18
17
16
15
VDD
COMPS
NC
INTST
TS6
TS5
TS4
TS3
TS2
TS1
SK-ID
RSYNC
RDS-ID
RDS-ID

TM2220 (RDS Filter/IC15)

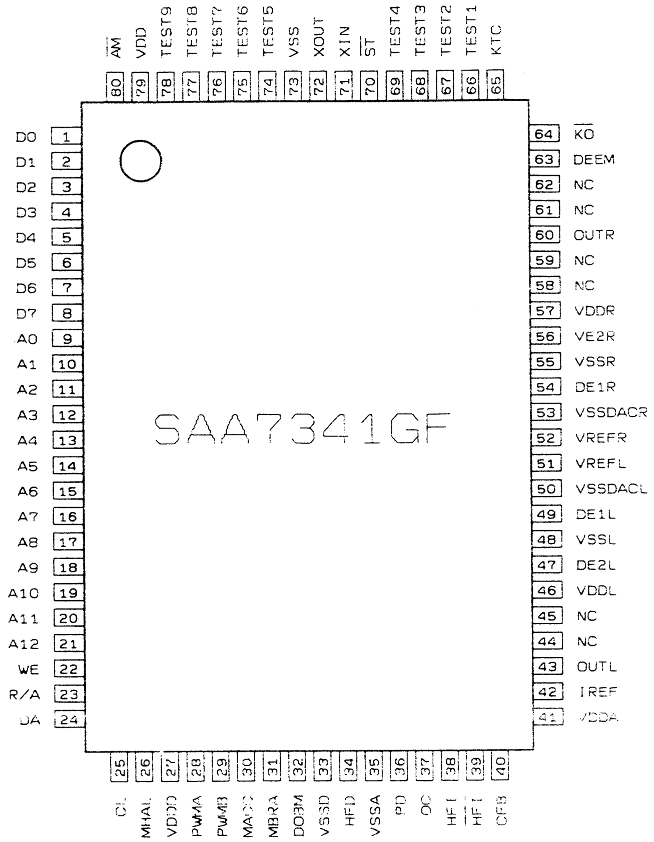

OCSIN
OSCOUT
CLKOUT
VSS
SIGIN
AGND
PREOUT
1
2
3
4
5
6
7
OSC
CLOCK GRN
CLIP
BUFF
PRE FILTER
POST FILTER
REFE-RENCE
57kHz BPF
14
13
12
11
10
9
8
VDD
CLPOUT
CLPIN
POSTOUT
VCC
VREF
BPFOUT

TDA7370(2CH POWER IC/IC16)

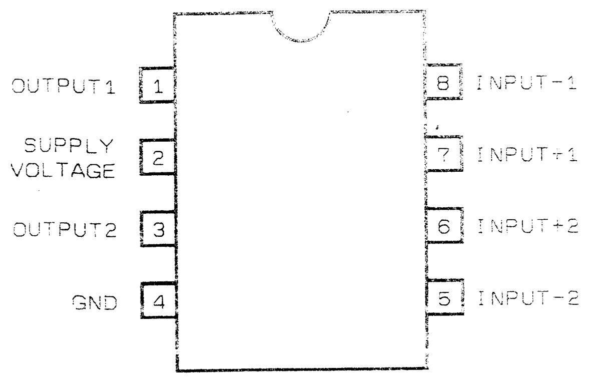

VCC
VCC
13
3
A1
A2 INV
A3
A4 INV
IN1
4
ST-BY
7
IN2
5
IN3
12
IN4
11
1
OUT1
2
OUT2
15
OUT3
14
OUT4
10
CLIP DET
6
8
9
SVR
PW-GND
S-GND

2. CDP Section

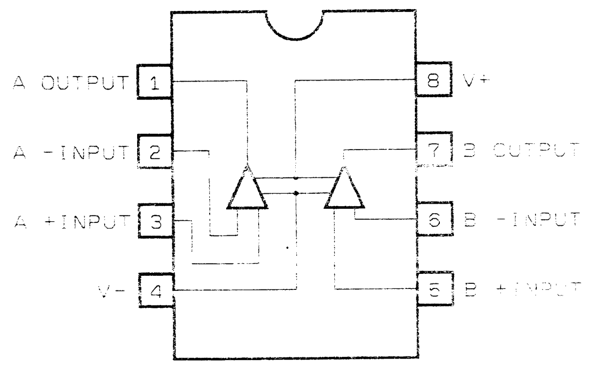
SAA7341GF (DA Converter & Motor Control/IC1)


SAA7341GF
AM
VDD
TEST9
TEST8
TEST7
TEST6
TEST5
VSS
XOUT
XIN
ST
TEST4
TEST3
TEST2
TEST1
KTC
80
79
78
77
76
75
74
73
72
71
70
69
68
67
66
65
D0
D1
D2
D3
D4
D5
D6
D7
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
WE
R/A
DA
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
64
63
62
61
60
59
58
57
56
55
54
53
52
51
50
49
48
47
46
45
44
43
42
41
KO
DEEM
NC
NC
OUTR
NC
NC
VDDR
VE2R
VSSR
DE1R
VSSDACR
VREFR
VREFL
VSSDACL
DE1L
VSSL
DE2L
VDDL
NC
NC
OUTL
IREF
VDDA
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
CL
MHAL
VDDD
PWMA
PWMB
MADC
MBRA
DOBM
VSSD
HFD
VSSA
PD
OC
HFI
HFI
CFB

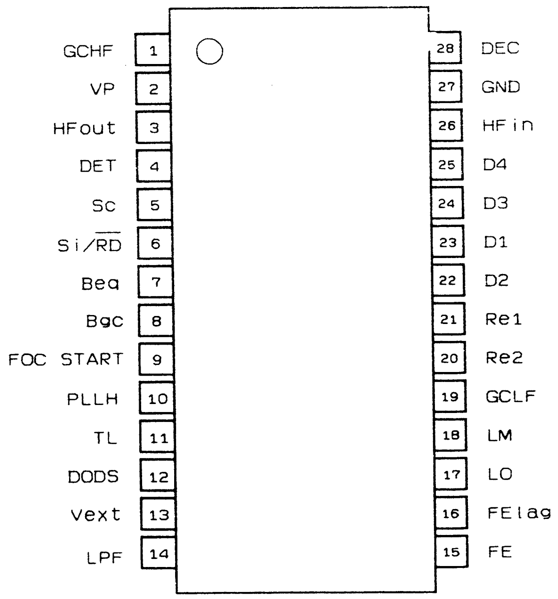
L272M (Dual Power OP-AMP./IC2, IC6, IC11)


OUTPUT1
SUPPLY VOLTAGE
OUTPUT2
GND
1
2
3
4
8
7
6
5
INPUT-1
INPUT+1
INPUT+2
INPUT-2

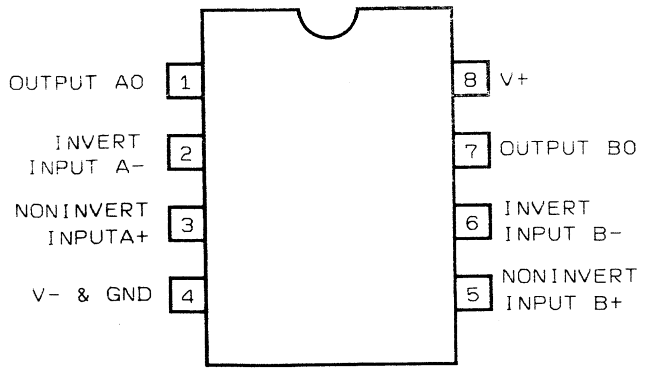
NJM2068M (Low-Noise OP-AMP)/ IC4, IC5)


A OUTPUT
A -INPUT
A +INPUT
V-
1
2
3
4
8
7
6
5
V+
B OUTPUT
B -INPUT
B +INPUT

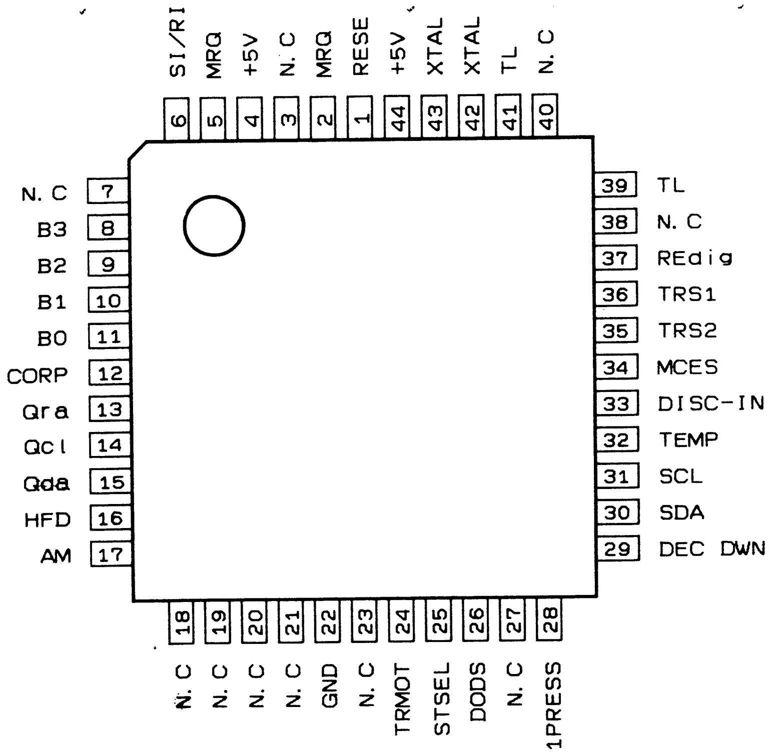
TDA8808T (Photo Diode Signal Processor/IC3)


GCHF
VP
HFout
DET
Sc
Si/RD
Beq
Bgc
FOC START
PLLH
TL
DODS
Vext
LPF
1
2
3
4
5
6
7
8
9
10
11
12
13
14
28
27
26
25
24
23
22
21
20
19
18
17
16
15
DEC
GND
HFin
D4
D3
D1
D2
Re1
Re2
GCLF
LM
LO
FElag
FE

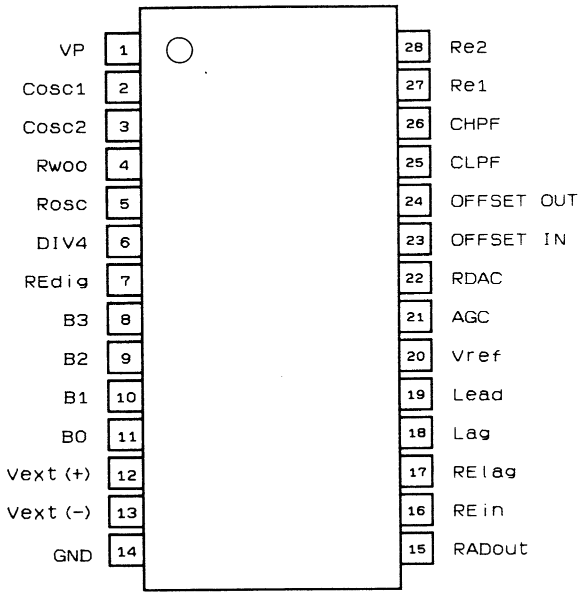
GL358AD (Dual OP-Amplifier/IC7)


OUTPUT A0
INVERT INPUT A-
NONINVERT INPUTA+
V- & GND
1
2
3
4
8
7
6
5
V+
OUTPUT B0
INVERT INPUT B-
NONINVERT INPUT B+

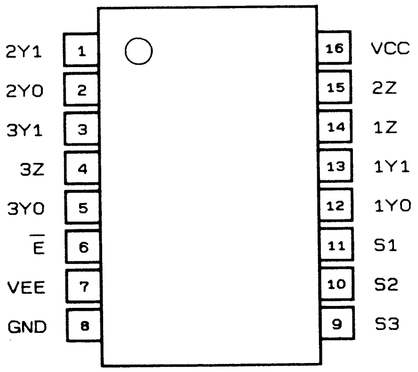
ZC405258CFN (Main Control LSI/IC8)


6 SI/RI
5 MRQ
4 +5V
3 N. C
2 MRQ
1 RESE
44 +5V
43 XTAL
42 XTAL
41 TL
40 N. C
7 N. C
8 B3
9 B2
10 B1
11 B0
12 CORP
13 Qra
14 Qcl
15 Qda
16 HFD
17 AM
39 TL
38 N. C
37 REdig
36 TRS1
35 TRS2
34 MCES
33 DISC-IN
32 TEMP
31 SCL
30 SDA
29 DEC DWN
18 N. C
19 N. C
20 N. C
21 N. C
22 GND
23 N. C
24 TRMOT
25 STSEL
26 DODS
27 N. C
28 1PRESS

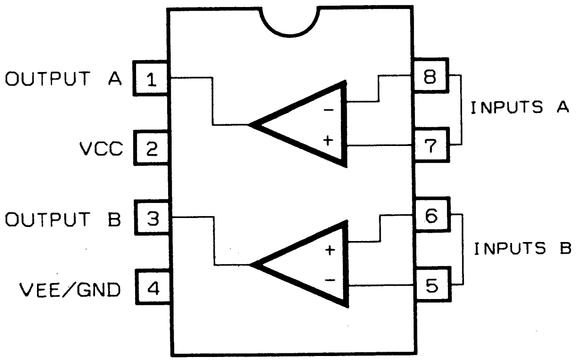
TDA8809T (Radial Error Signal Processor/IC9)


1 VP
2 Cosc1
3 Cosc2
4 Rwoo
5 Rosc
6 DIV4
7 REdig
8 B3
9 B2
10 B1
11 B0
12 Vext (+)
13 Vext (-)
14 GND
28 Re2
27 Re1
26 CHPF
25 CLPF
24 OFFSET OUT
23 OFFSET IN
22 RDAC
21 AGC
20 Vref
19 Lead
18 Lag
17 RElag
16 REin
15 RADout

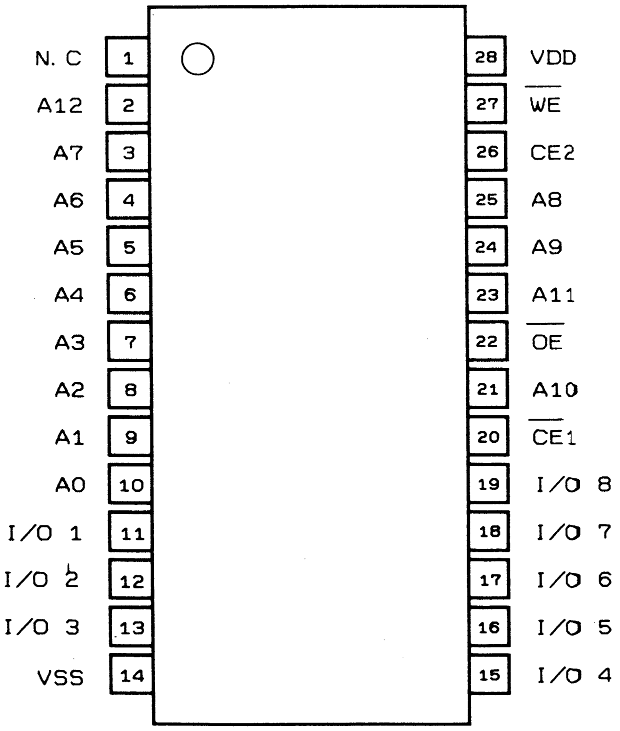
PC74HCT4053T (Tripe 2-CH Analog MPX./IC10)


1 2Y1
2 2Y0
3 3Y1
4 3Z
5 3Y0
6 $\overline{E}$
7 VEE
8 GND
16 VCC
15 2Z
14 1Z
13 1Y1
12 1Y0
11 S1
10 S2
9 S3

TCA0372DPI (Dual Power OP-AMP./IC12)


OUTPUT A 1
VCC 2
OUTPUT B 3
VEE/GND 4
8
7
INPUTS A
6
5
INPUTS B
-
+
+
-

UM6264-10L (Low-Power Static RAM/IC201)


1 N. C
2 A12
3 A7
4 A6
5 A5
6 A4
7 A3
8 A2
9 A1
10 A0
11 I/O 1
12 I/O 2
13 I/O 3
14 VSS
28 VDD
27 $\overline{WE}$
26 CE2
25 A8
24 A9
23 A11
22 $\overline{OE}$
21 A10
20 $\overline{CE1}$
19 I/O 8
18 I/O 7
17 I/O 6
16 I/O 5
15 I/O 4

Point to Point Wiring Diagram

A. Accessory Power Connector 20P

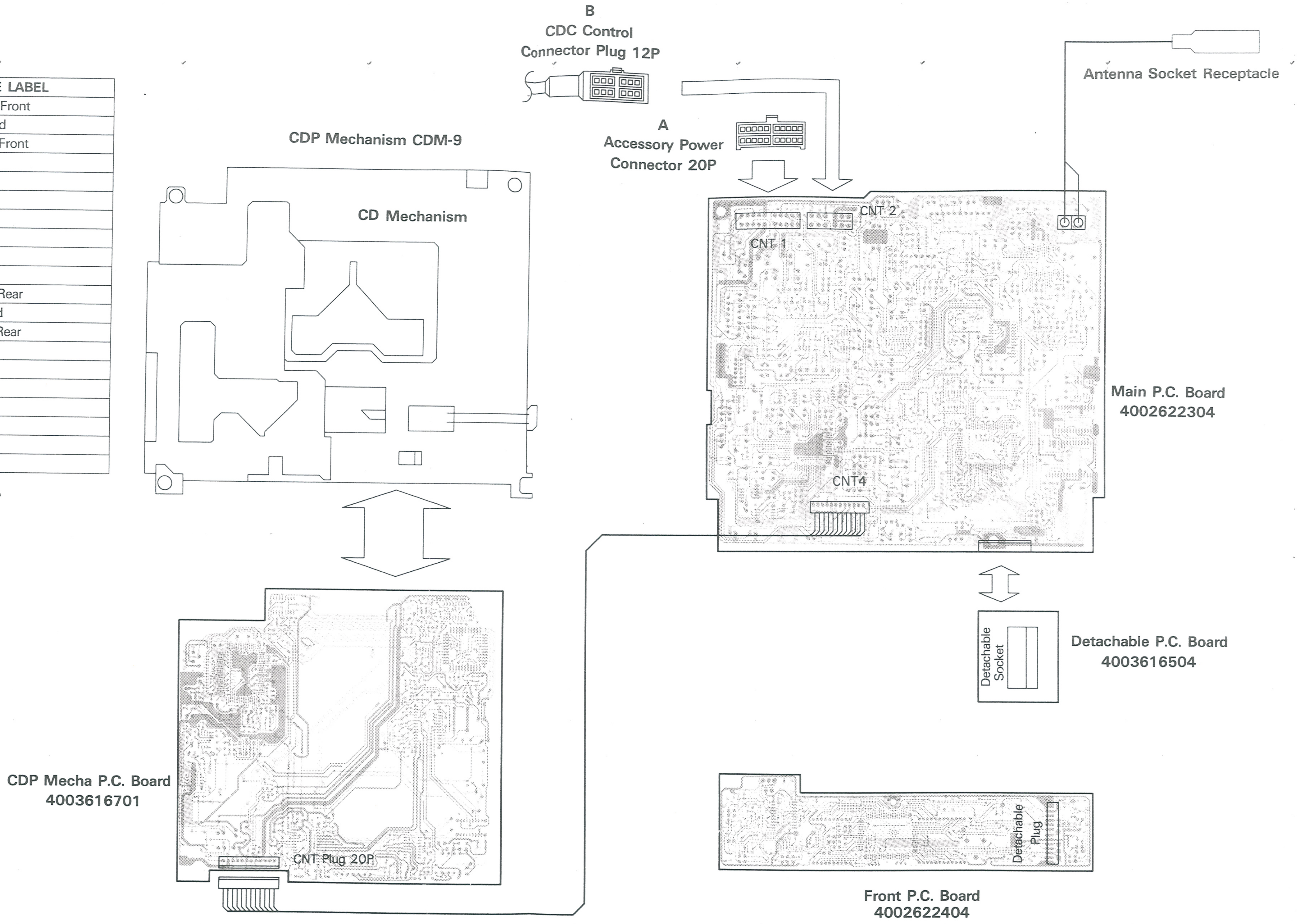
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

PIN	COLOR	TUBE LABEL
1	Red	Line Out R-CH Front
2	Black	Line Out Ground
3	White	Line Out L-CH Front
4	Yellow	Battery
5	N.C	
6	Black	Ground
7	White/Black	L-CH Front (−)
8	Green/Black	L-CH Rear (−)
9	Gray/Black	R-CH Front (−)
10	Violet/Black	R-CH Rear (−)
11	Red	Line Out R-CH Rear
12	Black	Line Out Ground
13	White	Line Out L-CH Rear
14	Blue/Black	Remote-Out
15	Blue	ANtenna B +
16	Red	ACC B +
17	White	L-CH Front (+)
18	Green	L-CH Rear (+)
19	Gray	R-CH Front (+)
20	Violet	R-CH Rear (+)

B. CDC Control Connector Plug 12P

1	2	3	4	5	6
7	8	9	10	11	12

PIN	CONTENT
1	Signal Ground
2	Ground
3	$\overline{\text{SRQ}}$
4	Ground
5	$\overline{\text{SCK}}$
6	SO/SI
7	Ground
8	$\overline{\text{CDC-CE}}$
9	Battery
10	Ground
11	R-CH
12	L-CH

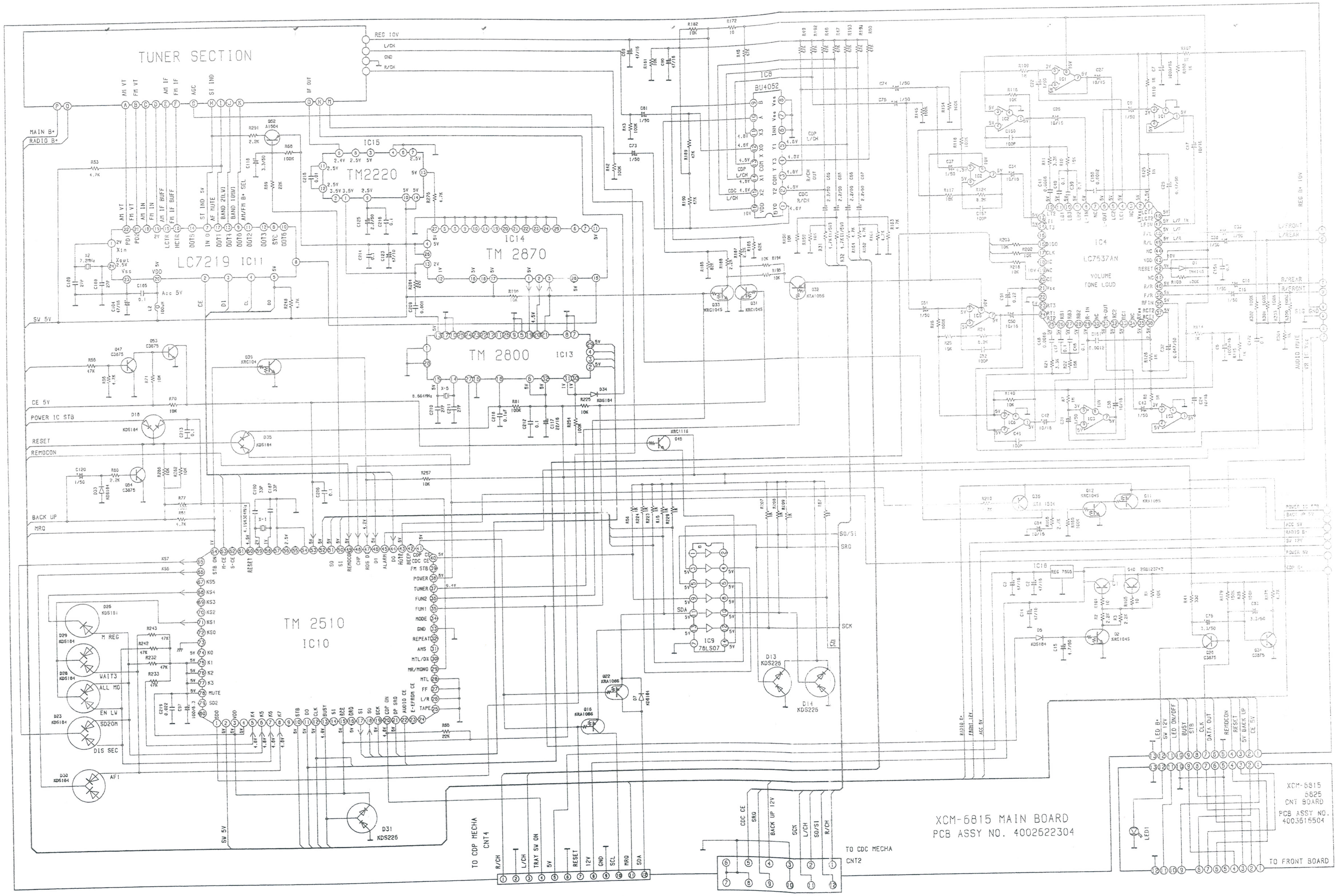


B
CDC Control
Connector Plug 12P
Antenna Socket Receptacle
A
Accessory Power
Connector 20P
CDP Mechanism CDM-9
CD Mechanism
CNT 2
CNT 1
Main P.C. Board
4002622304
CNT4
Detachable Socket
Detachable P.C. Board
4003616504
CDP Mecha P.C. Board
4003616701
CNT Plug 20P
Detachable Plug
Front P.C. Board
4002622404

Schematic Diagram

1. Main Section

Model No.:XCM-6815



TUNER SECTION
LC7219 IC11
IC15 TM2220
IC14 TM 2870
TM 2800 IC13
IC6 BU4052
IC4 LC7537AN VOLUME TONE LOUD
TM 2510 IC10
IC9 78L507
IC18 REG 7505
MAIN B+
RADIO B+
SW 5V
CE 5V
POWER IC STB
RESET
REMOCON
BACK UP
MRQ
SO/SI
SRQ
SCK
SDA
M REG
WAIT3
ALL MD
EN LW
SD20M
DIS SEC
AF1
D13 KDS225
D14 KDS225
D31 KDS226
TO CDP MECHA CNT4
R/CH
L/CH
TRAY SW ON
5V
RESET
12V
GND
SCL
MRQ
SDA
CDC CE
SRQ
BACK UP 12V
SCK
L/CH
SO/SI
R/CH
TO CDC MECHA CNT2
XCM-6815 MAIN BOARD
PCB ASSY NO. 4002522304
XCM-6815 5825 CNT BOARD PCB ASSY NO. 4003615504
LED1
TO FRONT BOARD

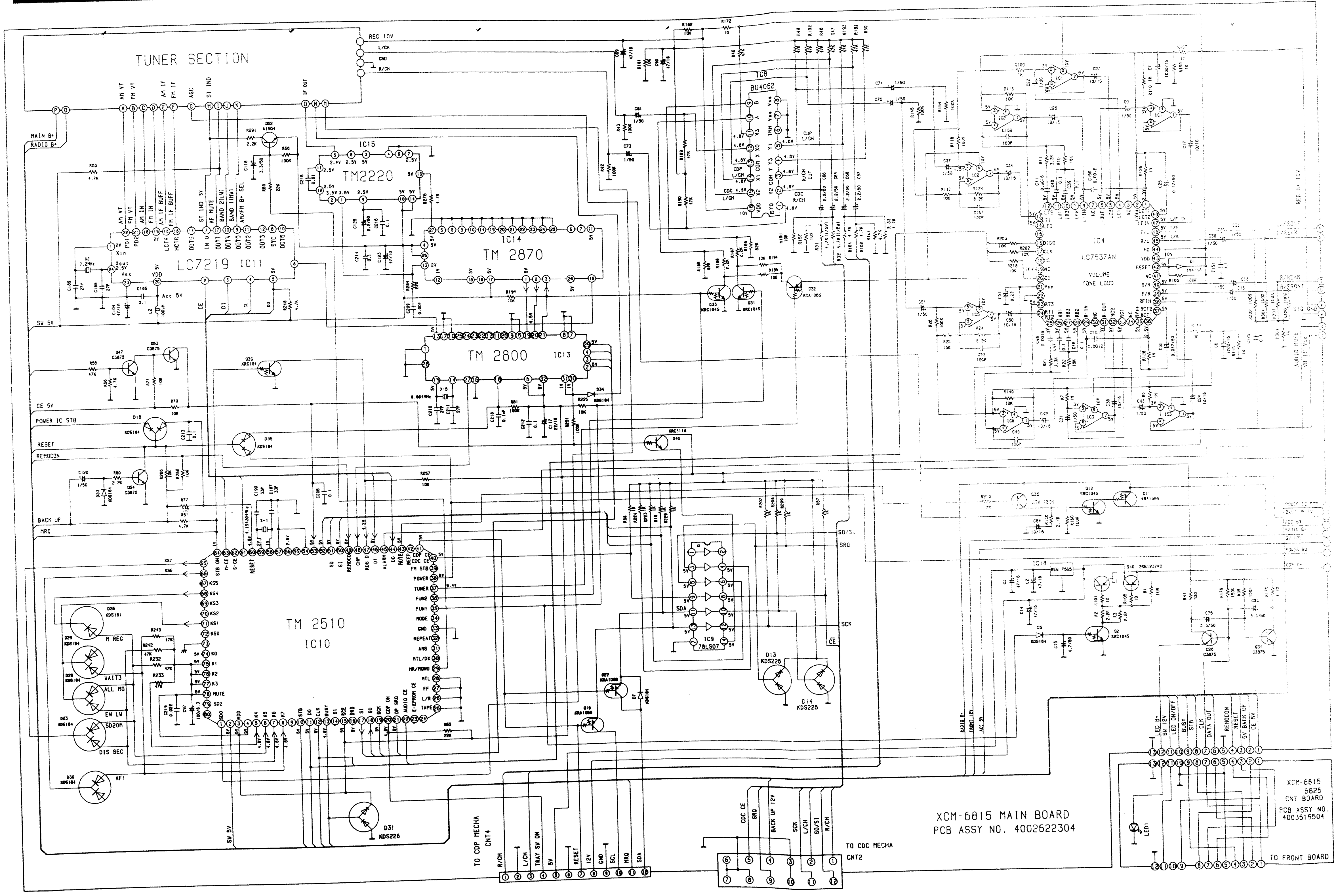
Notes:

1. Resistance is indicated in ohms, unless otherwise specified (k=1,000, M=1,000,000).
2. Capacitance values are shown in microfarads, unless otheswise noted (p=Pico-farads=Micro-microfarads, M=Mylar Capacitor).
3. Component values are subject to change without notice.

Schematic Diagram

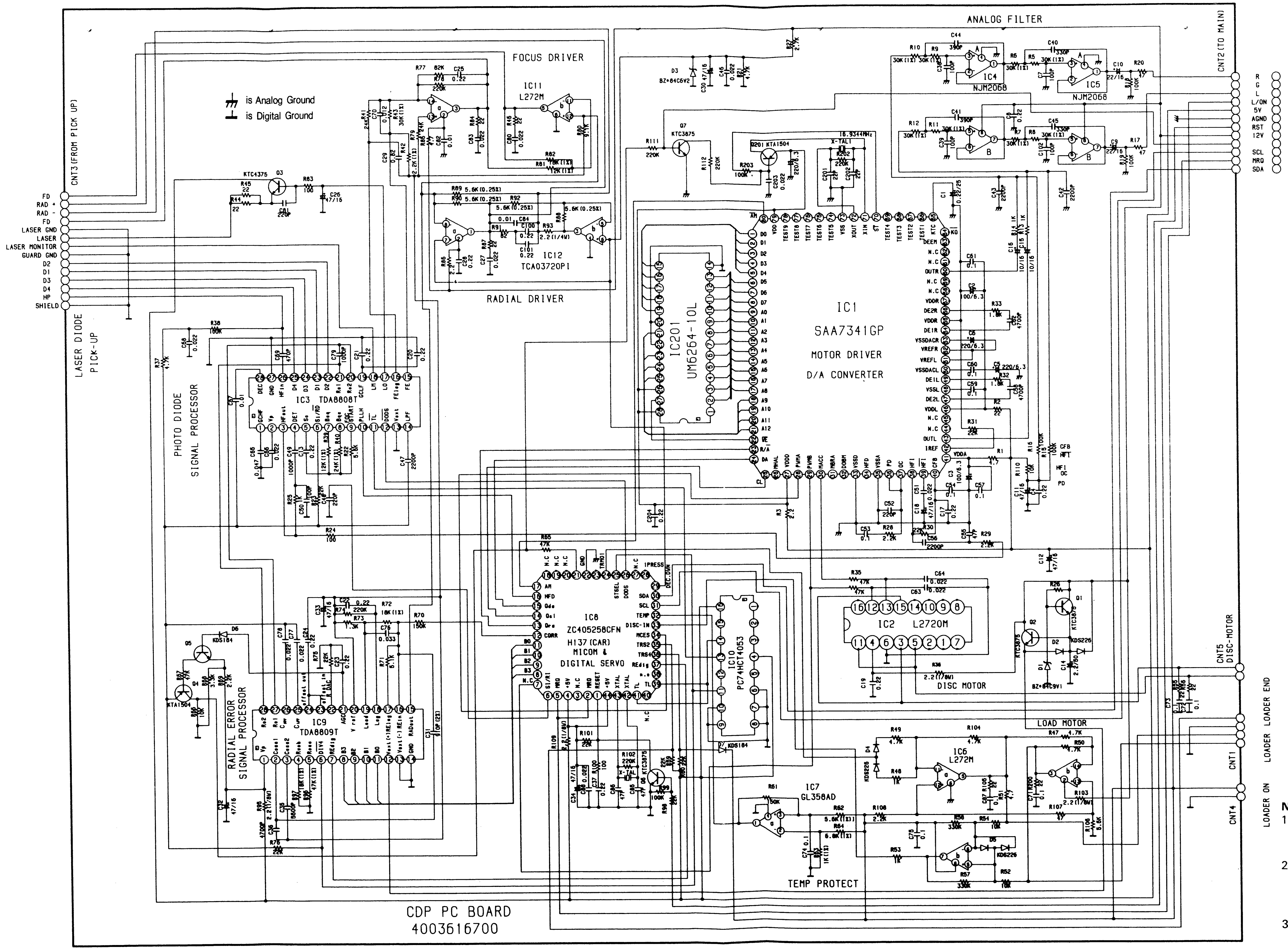
1. Main Section

Model No.:XCM-6815


TUNER SECTION
MAIN B+
RADIO B+
REG 10V
L/CH
GND
R/CH
LC7219 IC11
IC15
TM2220
IC14
TM 2870
TM 2800 IC13
TM 2510
IC10
IC8
BU4052
IC4
LC7537AN
VOLUME
TONE LOUD
IC9
78LS07
IC18
5V 5V
CE 5V
POWER IC STB
RESET
REMOCON
BACK UP
MRQ
M REG
WAIT3
ALL MO
EN LW
SD20M
DIS SEC
AFI
D13
KDS226
D14
KDS226
D31
KDS226
SO/SI
SRQ
SCK
CE
TO CDP MECHA
CNT4
R/CH
L/CH
TRAY 5V ON
5V
RESET
12V
GND
SCL
MRQ
SDA
CDC CE
SRQ
BACK UP 12V
SCK
L/CH
SO/SI
R/CH
TO CDC MECHA
CNT2
XCM-6815 MAIN BOARD
PCB ASSY NO. 4002622304
XCM-6815
5825
CNT BOARD
PCB ASSY NO.
4003615504
TO FRONT BOARD
LED1

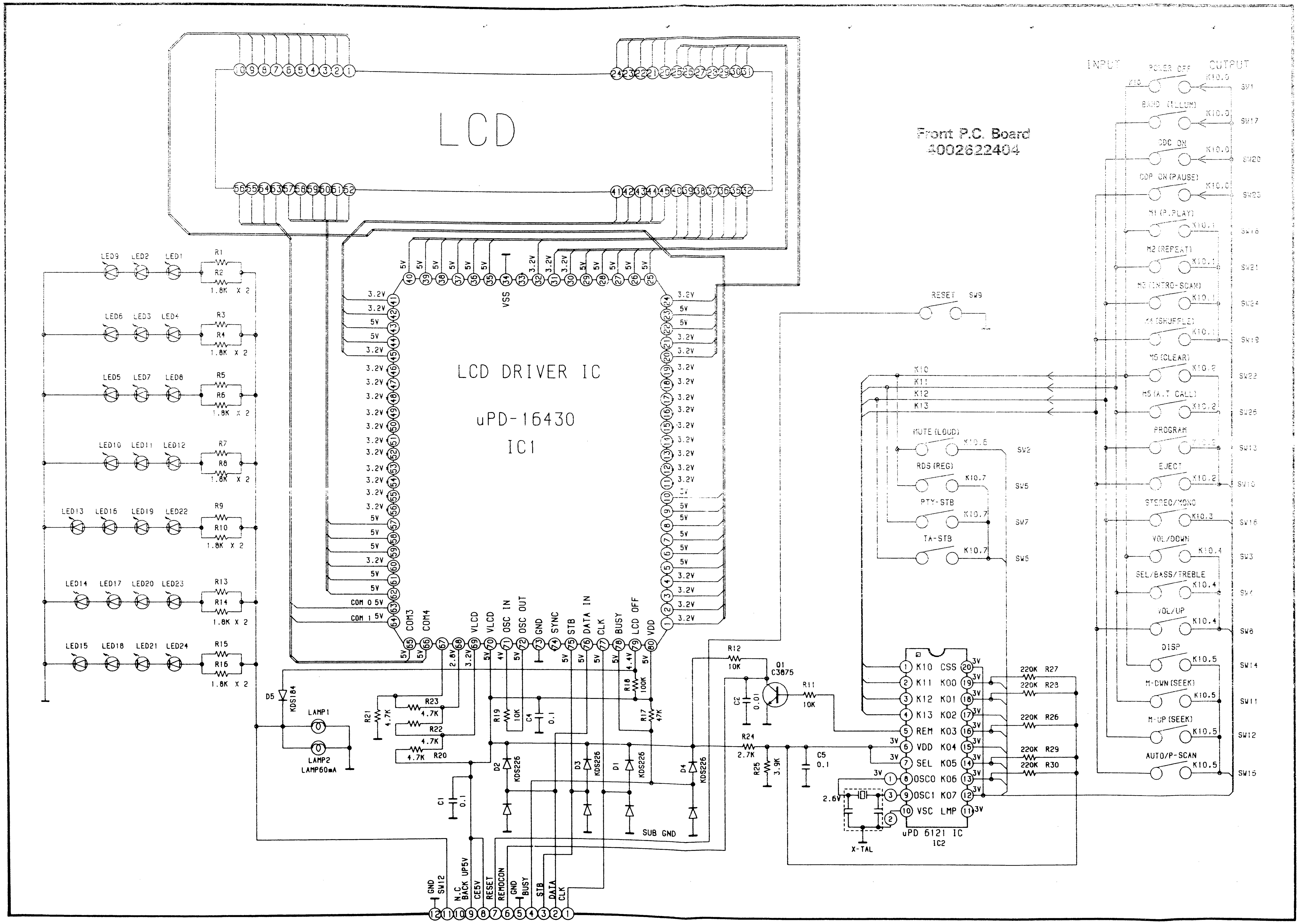
Notes:

1. Resistance is indicated in ohms, unless otherwise specified (k=1,000, M=1,000,000).
2. Capacitance values are shown in microfarads, unless otheswise noted (p=Pico-farads=Micro-microfarads, M=Mylar Capacitor).
3. Component values are subject to change without notice.

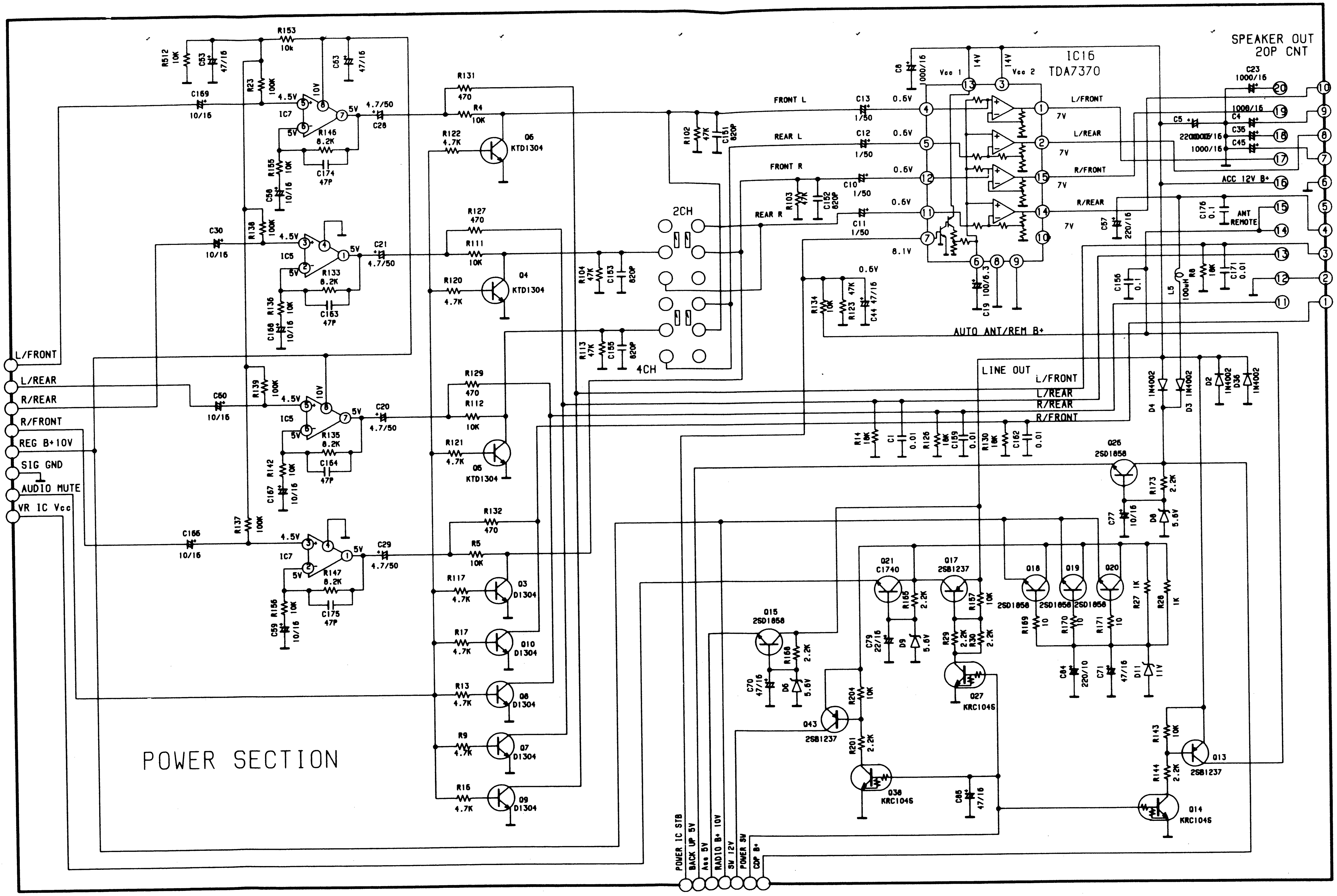

ANALOG FILTER
CNT2 (TO MAIN)
R
G
L
L/ON
5V
AGND
RST
12V
SCL
MRQ
SDA
is Analog Ground
is Digital Ground
FOCUS DRIVER
IC11
L272M
RADIAL DRIVER
IC12
TCA0372OPI
IC4
NJM2068
IC5
NJM2068
CNT3 (FROM PICK UP)
FD
RAD +
RAD -
FD
LASER GND
LASER
LASER MONITOR
GUARD GND
D2
D1
D3
D4
HP
SHIELD
LASER DIODE
PICK-UP
PHOTO DIODE
SIGNAL PROCESSOR
IC3 TDA8808T
IC201
UM6264-10L
IC1
SAA7341GP
MOTOR DRIVER
D/A CONVERTER
16.9344MHz
X-TAL
IC8
ZC405258CFN
H137 (CAR)
MICOM &
DIGITAL SERVO
IC10
PC74HC4053
IC2 L2720M
DISC MOTOR
CNT5
DISC-MOTOR
LOADER END
CNT1
LOADER ON
CNT4
LOAD MOTOR
IC6
L272M
IC7
GL358AD
TEMP PROTECT
RADIAL ERROR
SIGNAL PROCESSOR
IC9
TDA8809T
CDP PC BOARD
4003616700

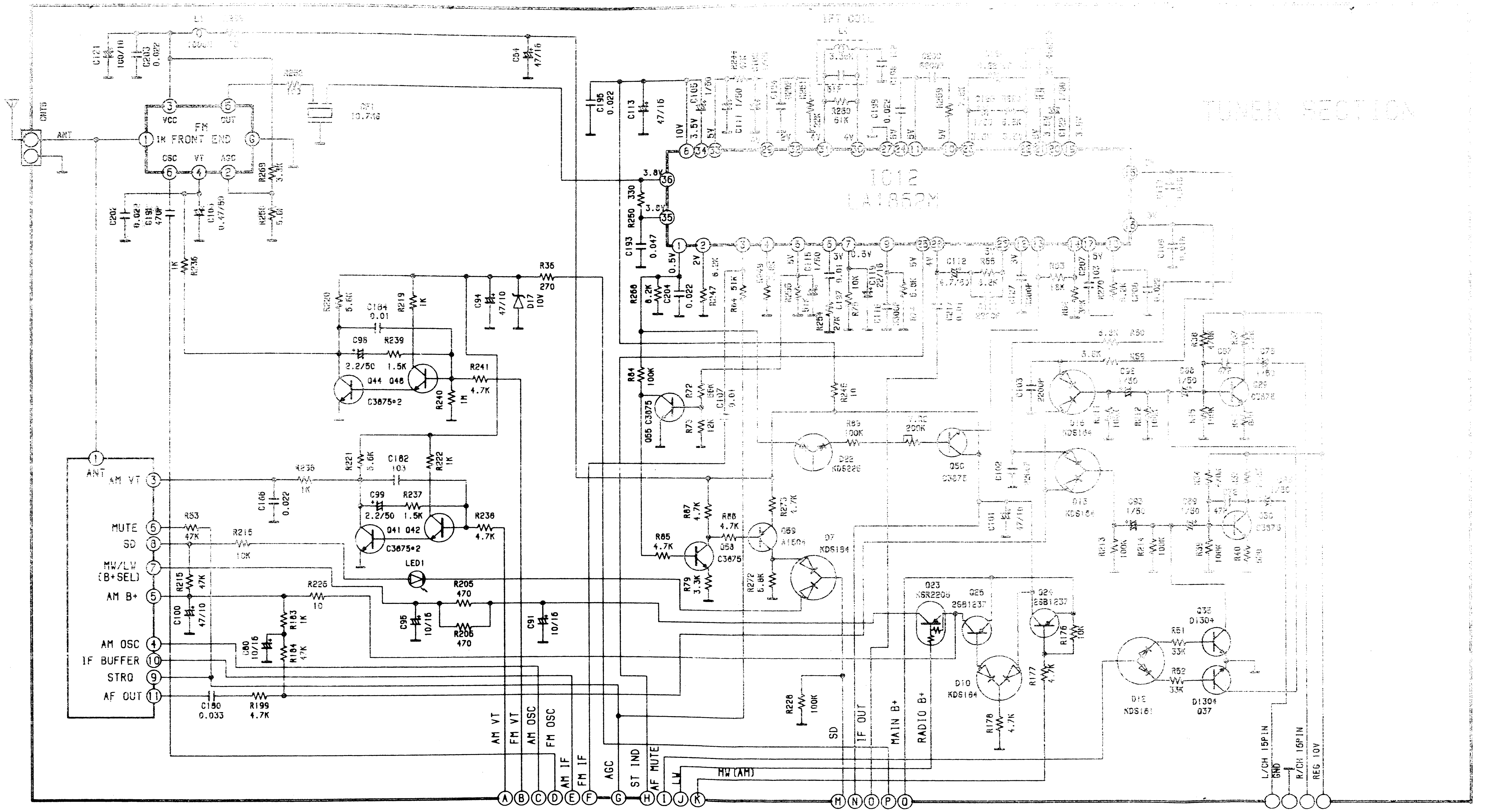
Notes:

1. Resistance is indicated in ohms, unless otherwise specified (k=1,000, M=1,000,000).
2. Capacitance values are shown in microfarads, unless otheswise noted (p=Pico-farads=Micro-microfarads, M=Mylar Capacitor).
3. Component values are subject to change without notice.

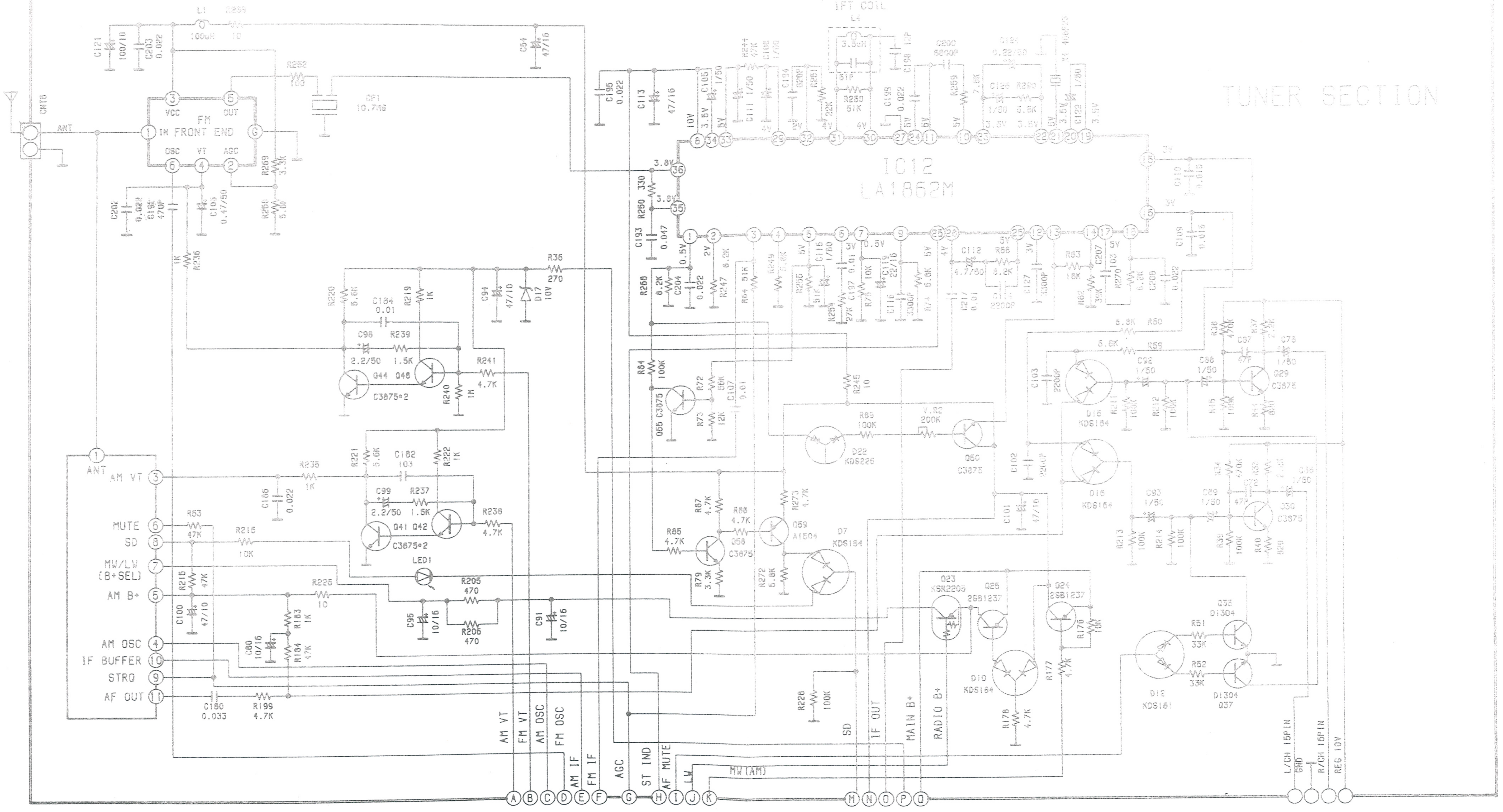

Front P.C. Board
4002622404
LCD
LCD DRIVER IC
uPD-16430
IC1
VSS
COM3
COM4
VLCD
OSC IN
OSC OUT
GND
SYNC
STB
DATA IN
CLK
BUSY
LCD OFF
VDD
COM 0
COM 1
3.2V
5V
2.6V
4V
4.4V
LED9 LED2 LED1
LED6 LED3 LED4
LED5 LED7 LED8
LED10 LED11 LED12
LED13 LED16 LED19 LED22
LED14 LED17 LED20 LED23
LED15 LED18 LED21 LED24
R1 R2 1.8K X 2
R3 R4 1.8K X 2
R5 R6 1.8K X 2
R7 R8 1.8K X 2
R9 R10 1.8K X 2
R13 R14 1.8K X 2
R15 R16 1.8K X 2
D5 KDS184
LAMP1
LAMP2
LAMP60mA
R21 4.7K
R23 4.7K
R22 4.7K
4.7K R20
R19 10K
C4 0.1
C1 0.1
D2 KDS226
D3 KDS226
D1 KDS226
D4 KDS226
R18 100K
R17 47K
R12 10K
Q1 C3875
C2 0.01
R11 10K
R24 2.7K
R25 3.9K
C5 0.1
SUB GND
X-TAL
K10 CSS
K11 K00
K12 K01
K13 K02
REM K03
VDD K04
SEL K05
OSCO K06
OSC1 K07
VSC LMP
uPD 6121 IC
IC2
3V
220K R27
220K R28
220K R26
220K R29
220K R30
RESET SW9
K10
K11
K12
K13
MUTE (LOUD) K10.6 SW2
RDS (REG) K10.7 SW5
PTY-STB K10.7 SW7
TA-STB K10.7 SW5
INPUT
OUTPUT
POWER OFF K10.0 SW1
BAND (ILLUM) K10.0 SW17
CDC ON K10.0 SW20
CDP ON (PAUSE) K10.0 SW23
M1 (P.PLAY) K10.1 SW18
M2 (REPEAT) K10.1 SW21
M3 (INTRO-SCAN) K10.1 SW24
M4 (SHUFFLE) K10.1 SW19
M5 (CLEAR) K10.2 SW22
M6 (A.T CALL) K10.2 SW26
PROGRAM K10.2 SW13
EJECT K10.2 SW10
STEREO/MONO K10.3 SW16
VOL/DOWN K10.4 SW3
SEL/BASS/TREBLE K10.4 SW4
VOL/UP K10.4 SW6
DISP K10.5 SW14
M-DWN (SEEK) K10.5 SW11
M-UP (SEEK) K10.5 SW12
AUTO/P-SCAN K10.5 SW15
GND
SW12
N.C
BACK UP5V
CE5V
RESET
REMOCON
GND
BUSY
STB
DATA
CLK
⑫⑪⑩⑨⑧⑦⑥⑤④③②①

4. Power Section


SPEAKER OUT
20P CNT
IC16
TDA7370
Vcc 1
Vcc 2
14V
C8
1000/16
FRONT L
REAR L
FRONT R
REAR R
C13
1/50
C12
1/50
C10
1/50
C11
1/50
0.6V
8.1V
7V
L/FRONT
L/REAR
R/FRONT
R/REAR
C19
100/6.3
C23
1000/16
C4
1000/16
C5
2200/16
C35
C45
1000/16
ACC 12V B+
ANT REMOTE
C176
0.1
C57
220/16
C156
0.1
L5
100uH
R8
10K
C171
0.01
AUTO ANT/REM B+
LINE OUT
L/FRONT
L/REAR
R/REAR
R/FRONT
D4 1N4002
D3 1N4002
D2 1N4002
D36 1N4002
R14 18K
C1 0.01
R126 18K
C159 0.01
R130 18K
C152 0.01
Q26
2SD1858
R173
2.2K
C77
10/16
D8
5.6V
R102
47K
C151
820P
R103
47K
C152
820P
R134
10K
R123
47K
C44
47/16
2CH
4CH
R104
47K
C153
820P
R113
47K
C155
820P
R153
10k
R512
10K
C53
47/16
R23
100K
C169
10/16
IC7
4.5V
5V
10V
R146
8.2K
C174
47P
R155
10K
C58
10/16
4.7/50
C28
R131
470
R4
10K
R122
4.7K
Q6
KTD1304
C30
10/16
R138
100K
IC5
R133
8.2K
C163
47P
R136
10K
C168
10/16
C21
4.7/50
R127
470
R111
10K
R120
4.7K
Q4
KTD1304
C50
10/16
R139
100K
R135
8.2K
C164
47P
R142
10K
C167
10/16
C20
4.7/50
R129
470
R112
10K
R121
4.7K
Q5
KTD1304
C166
10/16
R137
100K
R147
8.2K
C175
47P
R156
10K
C59
10/16
C29
4.7/50
R132
470
R5
10K
R117
4.7K
Q3
D1304
R17
4.7K
Q10
D1304
R13
4.7K
Q8
D1304
R9
4.7K
Q7
D1304
R16
4.7K
Q9
D1304
L/FRONT
L/REAR
R/REAR
R/FRONT
REG B+10V
SIG GND
AUDIO MUTE
VR IC Vcc
POWER SECTION
Q21
C1740
Q17
2SB1237
R165
2.2K
D9
5.6V
C79
22/16
R167
10K
R29
2.2K
R30
2.2K
Q27
KRC104S
Q18
Q19
Q20
2SD1858
R169
10
R170
10
R171
10
R27
1K
R28
1K
C84
220/10
C71
47/16
D11
11V
Q15
2SD1858
R168
2.2K
C70
47/16
D6
5.6V
R204
10K
Q43
2SB1237
R201
2.2K
Q38
KRC104S
C85
47/16
R143
10K
Q13
2SB1237
R144
2.2K
Q14
KRC104S
POWER IC STB
BACK UP 5V
Acc 5V
RADIO B+ 10V
SW 12V
POWER 5V
CDP B+


ANT
FM
IN FRONT END
VCC
OUT
OSC
VT
AGC
CF1
10.7M
IC12
LA1862M
IFT COIL
TUNER SECTION
C121
100/10
C203
0.022
C54
47/16
R269
3.3K
R258
5.6K
C202
0.022
C191
470P
C105
0.47/50
R236
1K
C195
0.022
C113
47/16
R250
330
C193
0.047
R266
8.2K
C204
0.022
R247
8.2K
R64
51K
R35
270
C94
47/10
D17
10V
R220
5.6K
C184
0.01
R219
1K
C98
2.2/50
R239
1.5K
Q44 Q48
C3875*2
R241
4.7K
R240
1M
R84
100K
Q55 C3075
R72
56K
C107
0.01
R73
12K
R246
10
R59
100K
Q22
KDS226
Q50
C3875
Q18
KDS184
Q13
KDS184
R221
5.6K
C182
103
R222
1K
R235
1K
C186
0.022
C99
2.2/50
R237
1.5K
Q41 Q42
C3875*2
R238
4.7K
R87
4.7K
R88
4.7K
R273
4.7K
R85
4.7K
Q53
C3875
Q59
A1504
D7
KDS184
R79
3.3K
R272
6.8K
LED1
R205
470
R206
470
R226
10
C95
10/16
C91
10/16
R53
47K
R215
10K
R215
47K
C100
47/10
C80
10/16
R183
1K
R184
47K
C180
0.033
R199
4.7K
ANT
AM VT
MUTE
SD
MW/LW
(B+SEL)
AM B+
AM OSC
IF BUFFER
STRQ
AF OUT
Q23
KSR2206
Q25
2SB1237
Q24
2SB1237
R176
10K
R177
4.7K
D10
KDS184
R178
4.7K
R228
100K
Q35
D1304
R51
33K
R52
33K
D1304
Q37
D12
KDS181
AM VT
FM VT
AM OSC
FM OSC
AM IF
FM IF
AGC
ST IND
AF MUTE
LW
MW(AM)
SD
IF OUT
MAIN B+
RADIO B+
L/CH 15PIN
GND
R/CH 15PIN
REG 10V
A
B
C
D
E
F
G
H
I
J
K
M
N
O
P
Q

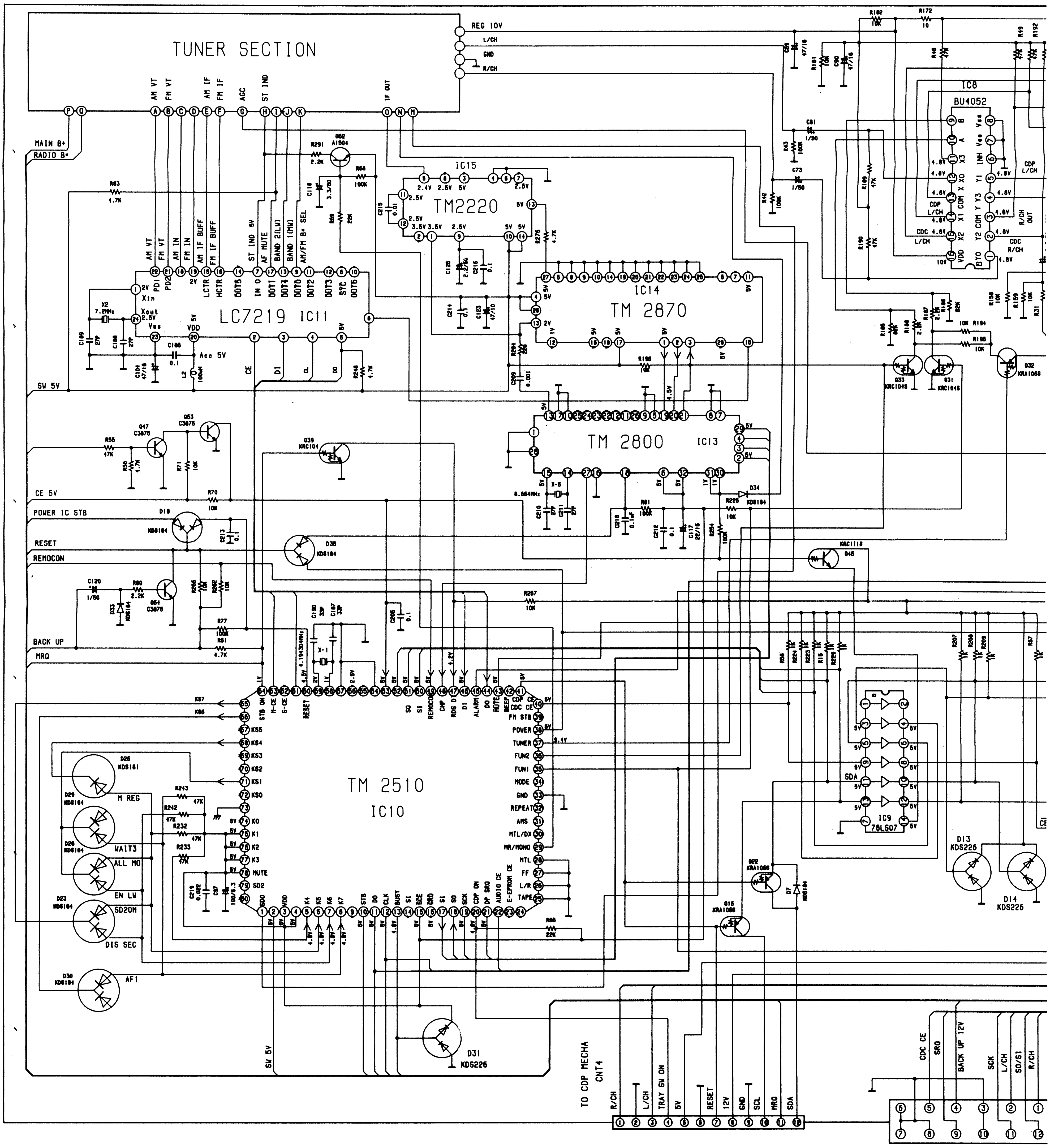
5. Tuner Section


TUNER SECTION
IC12
LA1862M
IFT COIL
FM
FRONT END
VCC
OUT
OSC
VT
AGC
CF1
10.7MS
ANT
CN15
L1
100uH
R266
10
C121
100/10
C203
0.022
C64
47/16
R252
100
R269
3.3K
C202
0.022
C196
470P
C106
0.47/50
R256
5.6K
R236
1K
C195
0.022
C113
47/16
C105
1/50
C111
1/50
C104
C200
5600P
C124
0.22/50
C125
C108
0.018
C109
0.015
R35
270
C94
47/10
D17
10V
R220
5.6K
C184
0.01
R219
1K
C98
2.2/50
R239
1.5K
Q44 Q45
C3875*2
R241
4.7K
R240
1M
R221
5.6K
C182
103
R222
1K
R235
1K
C165
0.022
C99
2.2/50
R237
1.5K
Q41 Q42
C3875*2
R238
4.7K
LED1
R205
470
C95
10/16
C91
10/16
R226
10
R163
1K
R134
47K
C80
10/16
C100
47/10
R215
47K
R53
47K
R216
10K
C180
0.033
R199
4.7K
ANT
AM VT
MUTE
SD
MW/LW
(B+SEL)
AM B+
AM OSC
IF BUFFER
STRO
AF OUT
R64
100K
Q65 C3875
R72
56K
R73
12K
C107
0.01
R89
100K
VR2
200K
D22
KDS226
Q50
C3875
R248
10
R67
4.7K
R68
4.7K
R65
4.7K
Q58
C3875
Q59
A1504
R273
4.7K
R79
3.3K
R272
6.8K
D7
KDS184
Q23
KRC2205
Q25
2SB1237
Q24
2SB1237
R176
10K
R177
4.7K
D10
KDS184
R178
4.7K
R228
100K
D16
KDS184
D15
KDS184
Q29
C3875
Q30
C3875
Q35
D1304
R51
33K
R52
33K
D1304
Q37
D12
KDS181
C103
2200P
C102
2200P
C101
47/16
R50
6.8K
R59
6.8K
C92
1/50
C93
1/50
C88
1/50
C89
1/50
C87
47P
C76
1/50
R63
18K
C207
103
C112
4.7/50
R55
8.2K
R266
8.2K
C204
0.022
R247
8.2K
C193
0.047
R250
330
AM VT
FM VT
AM OSC
FM OSC
AM IF
FM IF
AGC
ST IND
AF MUTE
LW
MW(AM)
SD
IF OUT
MAIN B+
RADIO B+
L/CH 15PIN
GND
R/CH 15PIN
REG 10V
A
B
C
D
E
F
G
H
I
J
K
M
N
O
P
Q

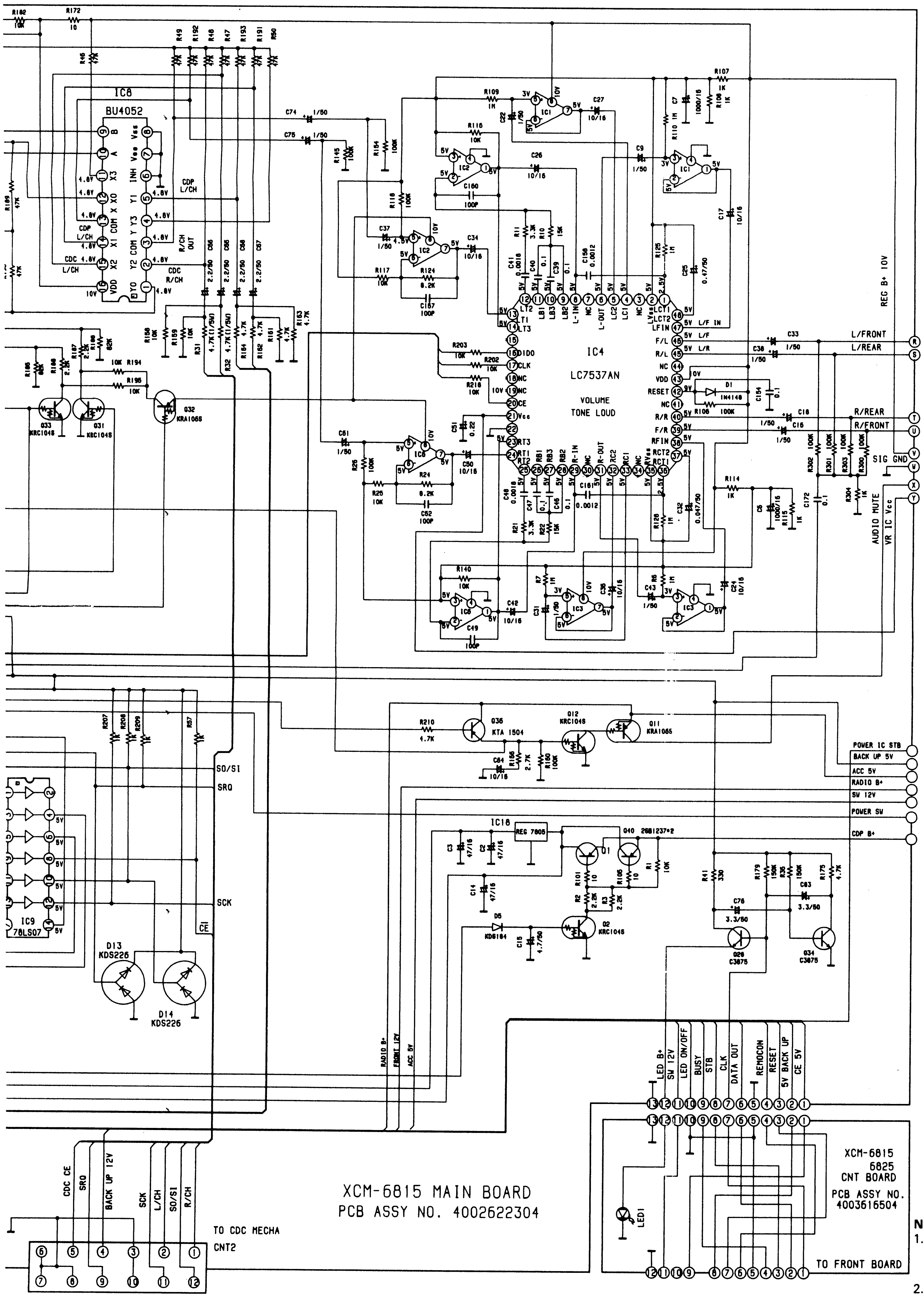
A B C D

Schematic Diagr

Model No.:XCM-6


1
2
3
4
5
TUNER SECTION
REG 10V
L/CH
GND
R/CH
AM VT
FM VT
AM IF
FM IF
AGC
ST IND
IF OUT
MAIN B+
RADIO B+
SW 5V
CE 5V
POWER IC STB
RESET
REMOCON
BACK UP
MRQ
LC7219 IC11
TM2220
IC15
TM 2870
IC14
TM 2800
IC13
TM 2510
IC10
IC8
BU4052
IC9
78LS07
SDA
M REG
WAIT3
ALL MO
EN LW
SD20M
DIS SEC
AF1
D13
KDS226
D14
KDS226
D31
KDS226
TO CDP MECHA
CNT4
R/CH
L/CH
TRAY SW ON
5V
RESET
12V
GND
SCL
MRQ
SDA
CDC CE
SRQ
BACK UP 12V
SCK
L/CH
SO/SI
R/CH
SW 5V

ematic Diagram (I)
odel No.:XCM-6815

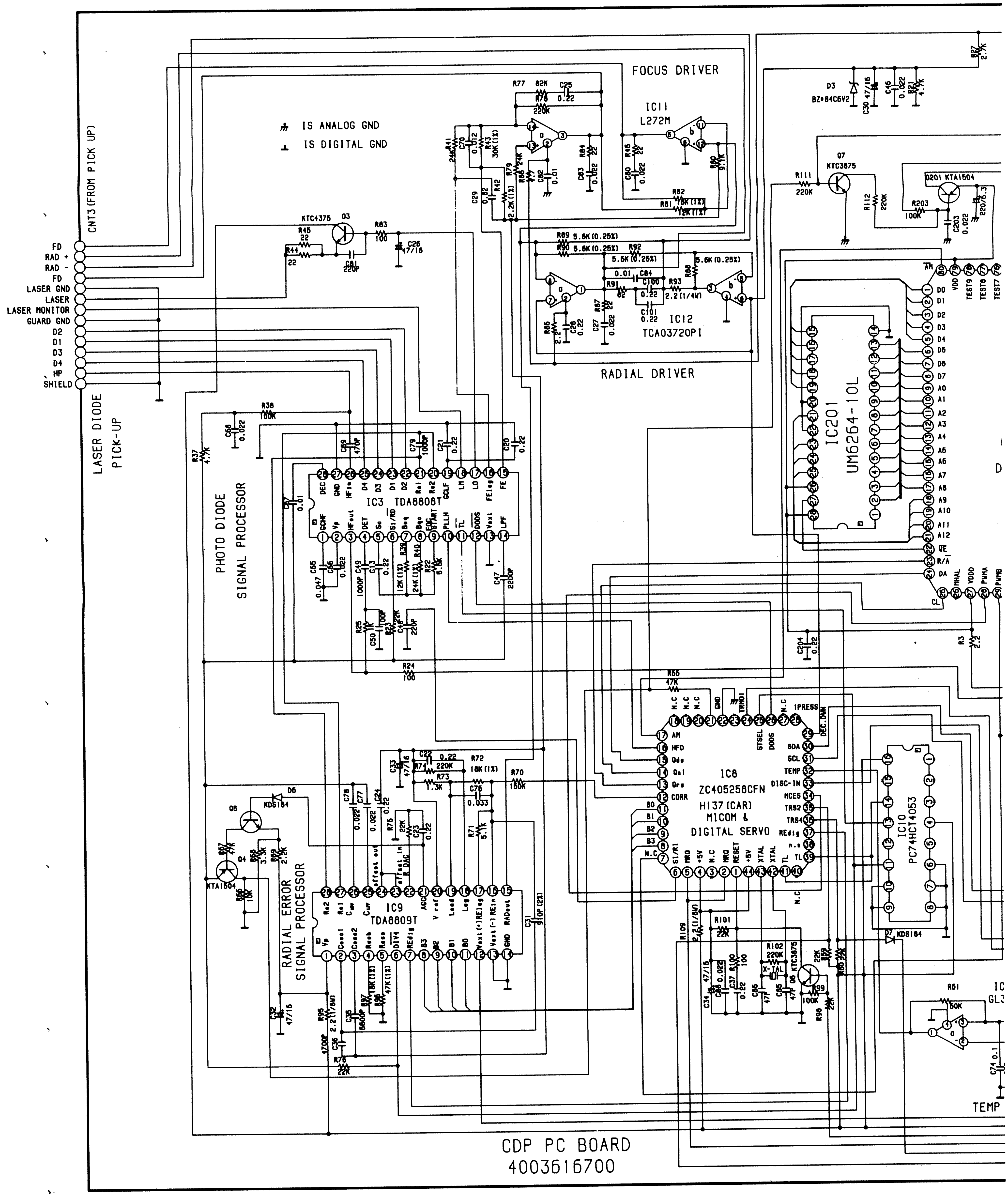

IC8
BU4052
IC4
LC7537AN
VOLUME
TONE LOUD
IC1
IC2
IC3
IC6
IC9
78LS07
IC18
REG 7805
Q1
Q2
KRC104S
Q11
KRA106S
Q12
KRC104S
Q26
C3875
Q31
KRC104S
Q32
KRA106S
Q33
KRC104S
Q34
C3875
Q36
KTA 1504
Q40 2SB1237*2
D1
1N4148
D5
KDS184
D13
KDS226
D14
KDS226
LED1
L/FRONT
L/REAR
R/REAR
R/FRONT
SIG GND
AUDIO MUTE
VR IC Vcc
REG B+ 10V
POWER IC STB
BACK UP 5V
ACC 5V
RADIO B+
SW 12V
POWER SW
CDP B+
SO/SI
SRQ
SCK
CE
RADIO B+
FRONT 12V
ACC 5V
LED B+
SW 12V
LED ON/OFF
BUSY
STB
CLK
DATA OUT
REMOCON
RESET
5V BACK UP
CE 5V
CDC CE
SRQ
BACK UP 12V
SCK
L/CH
SO/SI
R/CH
TO CDC MECHA
CNT2
XCM-6815 MAIN BOARD
PCB ASSY NO. 4002622304
XCM-6815
6825
CNT BOARD
PCB ASSY NO.
4003616504
TO FRONT BOARD

Notes:

1. Resistance is indicated in ohms, unless otherwise specified (k=1,000, M=1,000,000).
2. Capacitance values are shown in microfarads, unless otheswise noted (p=Pico-farads=Micro-microfarads, M=Mylar Capacitor).
3. Component values are subject to change without notice.

Schematic Diagra

Model No.:XCM-6

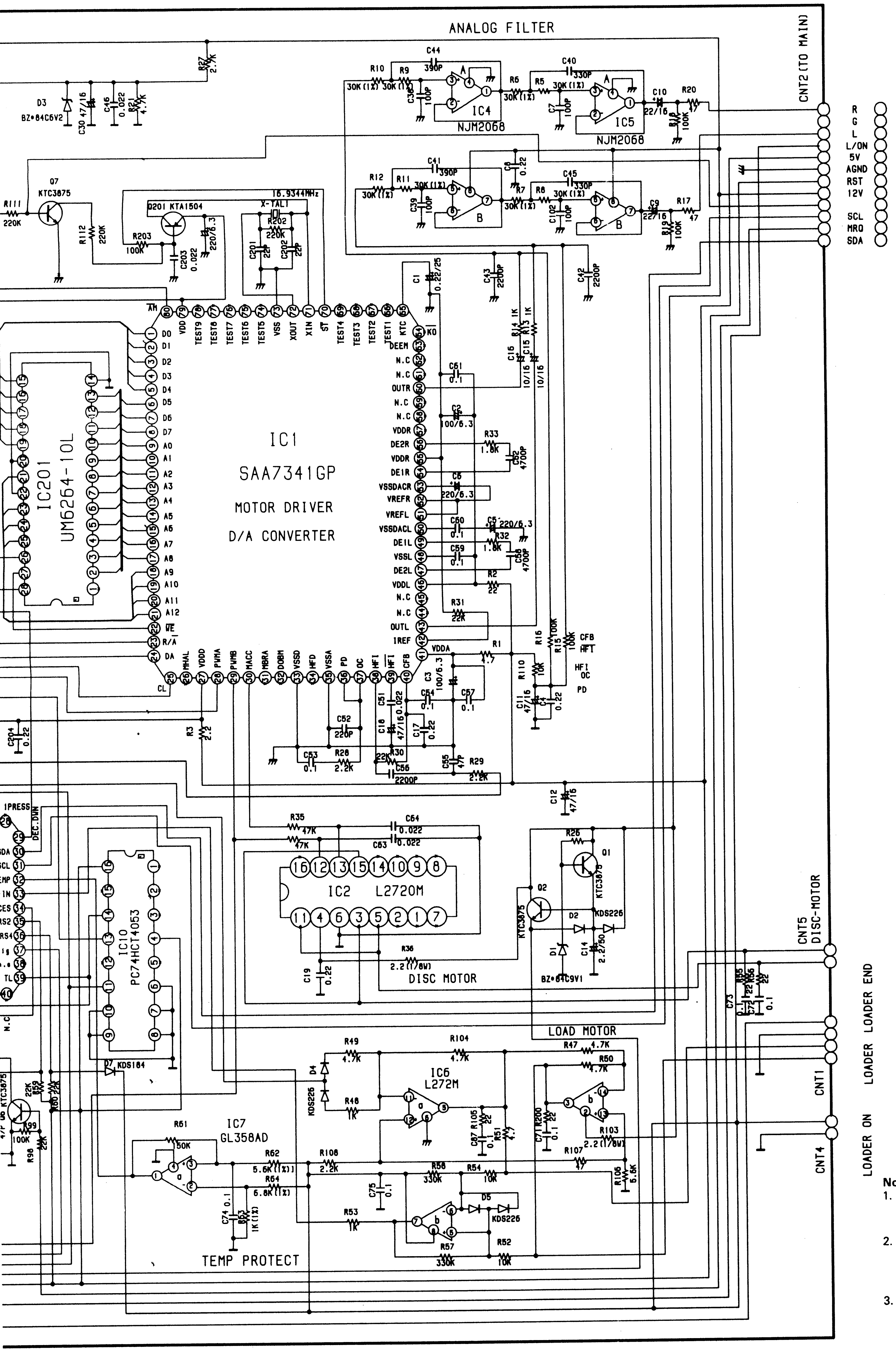


A
B
C
D
1
2
3
4
5
IS ANALOG GND
IS DIGITAL GND
CNT3 (FROM PICK UP)
FD
RAD +
RAD -
FD
LASER GND
LASER
LASER MONITOR
GUARD GND
D2
D1
D3
D4
HP
SHIELD
LASER DIODE
PICK-UP
FOCUS DRIVER
IC11
L272M
RADIAL DRIVER
IC12
TCA03720PI
KTC4375
Q3
PHOTO DIODE
SIGNAL PROCESSOR
IC3 TDA8808T
RADIAL ERROR
SIGNAL PROCESSOR
IC9
TDA8809T
Q5
KDS184
D6
Q4
KTA1504
IC8
ZC405258CFN
H137 (CAR)
MICOM &
DIGITAL SERVO
IC201
UM6264-10L
IC10
PC74HCT4053
Q7
KTC3875
Q201 KTA1504
D3
BZ*84C6V2
D7 KDS184
Q6 KTC3875
X-TAL
TEMP
CDP PC BOARD
4003616700

D **E** **F** **G**

chematic Diagram (II)

Model No.:XCM-6815



ANALOG FILTER
CNT2 (TO MAIN)
R
G
L
L/ON
5V
AGND
RST
12V
SCL
MRQ
SDA
IC4
NJM2068
IC5
NJM2068
R10
R9
C44 390P
C40 330P
R5
C7 100P
C10 22/16
R20 47
R18 100K
C41 390P
C45 330P
R12 30K (1%)
R11 30K (1%)
C39 100P
R7 30K (1%)
R8 30K (1%)
C102 100P
C9 22/16
R17 47
R19 100K
C8 0.22
D3 BZ•84C6V2
C30 47/16
C45 0.022
R21 4.7K
R27 2.7K
Q7 KTC3875
R111 220K
R112 220K
R203 100K
Q201 KTA1504
C203 0.022
220/6.3
16.9344MHz
X-TAL1
R202 220K
C201 22P
C202 22P
C1 0.22/25
C43 2200P
C42 2200P
R14 1K
R13 1K
C16 10/16
C15 10/16
IC1
SAA7341GP
MOTOR DRIVER
D/A CONVERTER
IC201
UM6264-10L
C61 0.1
C2 100/6.3
R33 1.8K
C62 4700P
C6 220/6.3
C60 0.1
C5 220/6.3
R32 1.8K
C59 0.1
C58 4700P
R2 22
R31 22K
R1 4.7
R16 100K
R15 100K
CFB
HFT
HFI
OC
PD
R110 10K
C11 47/16
C4 0.22
C3 100/6.3
C54 0.1
C57 0.1
C51 0.022
C18 47/16
C17 0.22
C52 220P
C53 0.1
R28 2.2K
R30 22K
C55 47P
R29 2.2K
C56 2200P
R3 2.2
C204 0.22
C12 47/16
R35 47K
C64 0.022
C63 0.022
IC2 L2720M
R36 2.2 (1/8W)
C19 0.22
DISC MOTOR
R26
Q1 KTC3875
Q2 KTC3875
D2 KDS226
D1 BZ•84C9V1
C14 2.2/50
CNT5 DISC-MOTOR
LOADER END
C73 0.1
C72 0.1
R55 22
R56 22
LOAD MOTOR
LOADER
CNT1
LOADER ON
CNT4
IC10
PC74HCT4053
D7 KDS184
IC6
L272M
R49 4.7K
R104 4.7K
D4 KDS226
R48 1K
C87 0.1
R105 22
R51 4.7
R47 4.7K
R50 4.7K
C71 0.1
R200 22
R103 2.2 (1/8W)
R107 47
R106 5.6K
IC7
GL358AD
R61 50K
R62 5.6K (1%)
R64 6.8K (1%)
R108 2.2K
R58 330K
R54 10K
C75 0.1
D5 KDS225
R53 1K
R57 330K
R52 10K
C74 0.1
R63 1K (1%)
TEMP PROTECT
Q6 KTC3875
R99 100K
R96
R59 22K
R60 22K
1PRESS
DEC.DWN

Notes:

1. Resistance is indicated in ohms, unless otherwise specified (k=1,000, M=1,000,000).
2. Capacitance values are shown in microfarads, unless otheswise noted (p=Pico-farads=Micro-microfarads, M=Mylar Capacitor).
3. Component values are subject to change without notice.